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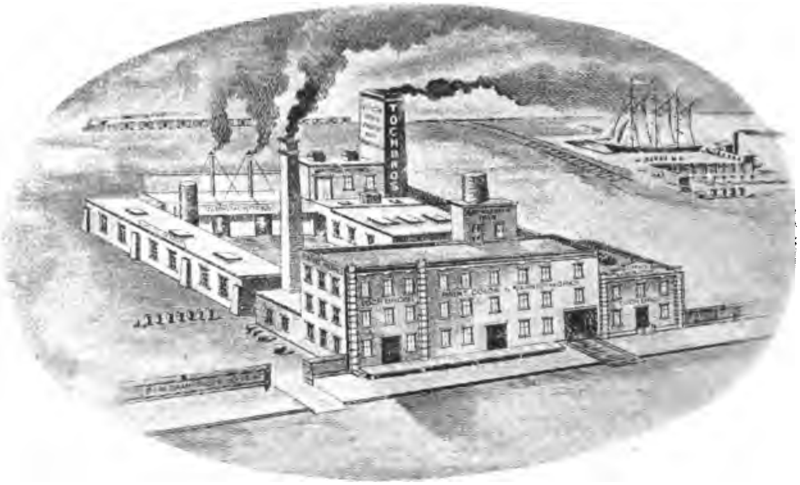
Joch brothers.



TOCH BROTHERS' FACTORY AT LONG ISLAND CITY

THE development in building in the past sixty years is only equaled by the facility with which new forms of construction are supplied with appropriate and perfect methods of protection.

NEW YORK PUBLIC LIBRARY BUILDING

Carrere & Hastings, Architects
John Pierce Co. and Klee-Thomson Co., Contractors

Protected with "R. I. W." Damp-Resisting Paint

THE
"R. I. W." BOOK

The Damp-proofing and Protection of Modern Building Construction of Every Type

Issued on the Occasion of Our Sixtieth
Year of Uninterrupted Business in
Technical Paints & Varnishes

1848—1908

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Established 1848. Oldest Technical Paint & Varnish
House in the United States of America
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Works, Long Island City
1908

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VIEWS IN TOCH BROTHERS' LABORATORY
WORKS AT LONG ISLAND CITY, N. Y.

Introductory

THE firm of Toch Brothers has continued in uninterrupted business for the past sixty years, the business during all that time having been in the hands of the family, and passing from one generation to the next. While the firm manufactures paints for both decorative and protective purposes, and varnishes for the special uses of various trades, the portion of their business which chiefly concerns the architect and engineer lies in various damp-proofing and steel-protecting compounds which have worthily reached a high place in American building construction through their inherent merit.

This volume, then, is intended to acquaint the architect and engineer with these preparations and their method of application, their diverse uses, and their efficiency; and to put at his command the necessary information which will enable him to specify them on the intrinsic merits which they possess.

Of the many illustrations in the volume we can only say that the problem has been one of elimination rather than one of the collection of photographs in which Toch preparations are used. The disastrous fire of San Francisco has given opportunity for an immense amount of construction on which Toch damp-proofing compounds have been adopted, and, yet, owing to lack of space, only a few illustrations, and some of these photographs of temporary construction, are allowed to appear.

Within the New York City district, by which we mean Greater New York, and the suburban territory in New Jersey, there are over 9600 edifices which have some of the many forms of Toch protection against dampness and deterioration. This one territory represents the absolute confidence in which Toch preparations are held locally by architects and contractors who have had opportunity to thoroughly understand the use of the materials.

The oldest protective paint manufactured in the Long Island City factory is known under the name " R. I. W.," which stands for the words " Remember, it's waterproof."

This paint comes in various numbers, such as " R. I. W. Damp Resisting Paint No. 232," " R. I. W. Damp Resisting Paint No. 112," " R. I. W. No. 110," " R. I. W. No. 49," etc. These paints differ widely in composition, covering power, and in the type of protection they afford—whether against dampness, acid fumes, electrolysis, staining, etc.

In addition to these, a cement-base paint is manufactured for the permanent protection of iron and steel against oxidation. This paint is a tri-calcic, synthetic cement in liquid form which is applied to the clean iron or steel by means of a brush and which immediately forms a skin or film, after which setting proceeds from the surface of the iron outwards, until a hard, permanent, stonelike protection is given the steel or iron for all time, and protected from the direct influence of the rust. This material is known as " Tockolith." *Patented.*

Cement-concrete construction has a long series of appropriate protections and applications. Among these are " Toxement," a powder, 2% of which by weight waterproofs cement construction against pressure; " Liquid Konkerit," a paint for exterior walls which is designed to prevent dampness from striking through; " Cement Filler," patented, and " Cement Floor Paint," which change the material of cement floors into what is practically an artificial porcelain—hard, vitreous, dustless and capable of attaining a high polish. "Anhydrosol," a liquid, damp-proofs stone and brick walls exposed to the weather.

The firm of Toch Brothers owns over thirty patents and copyrights on various preparations originated in their laboratory by Maximilian Toch, F. C. S., author of " The Chemistry and Technology of Mixed Paints."

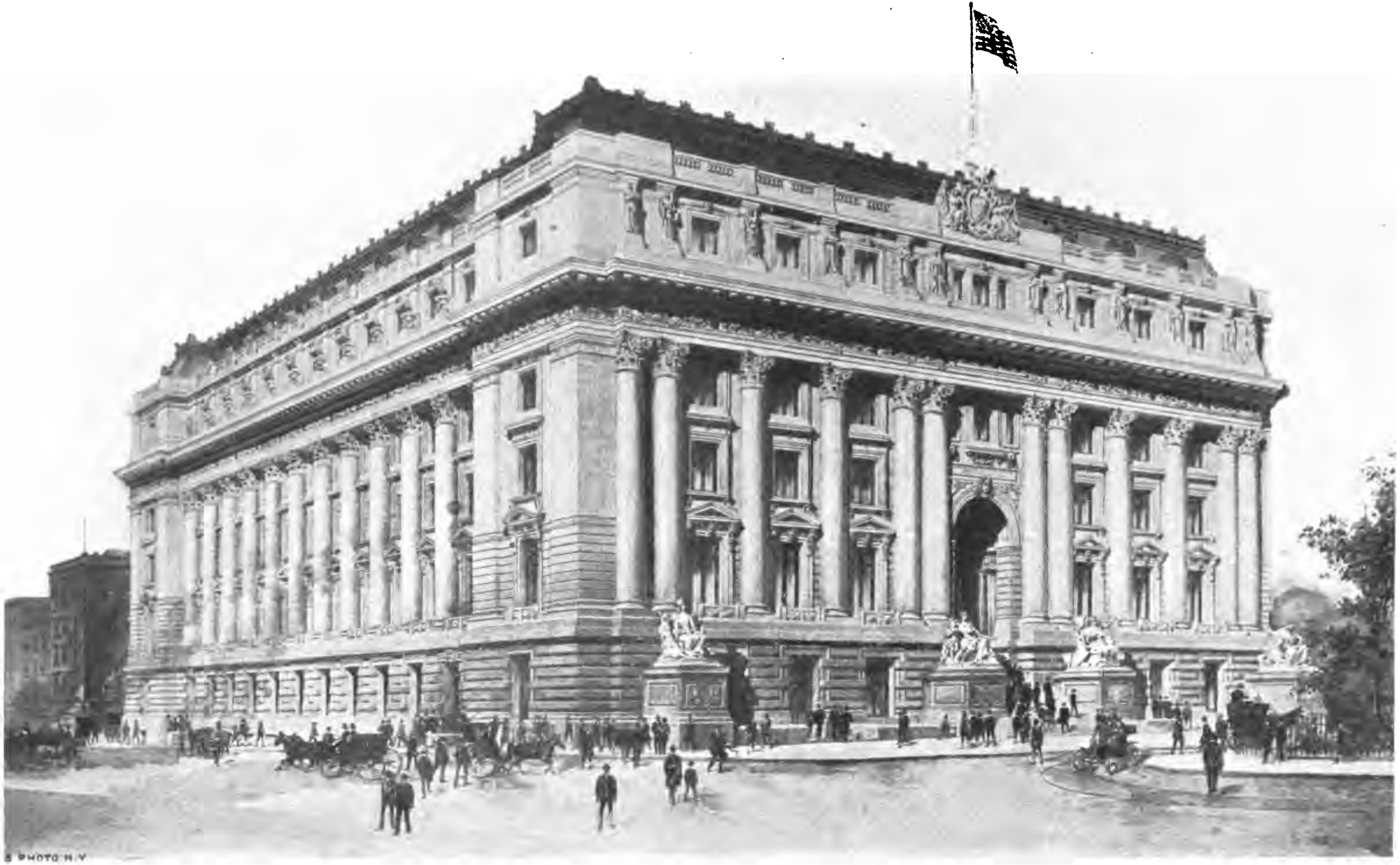
CITY HALL, NEWARK, N. J.

J. H. & W. C. Ely, Architects E. M. Waldron Co., Contractors
Stone and walls backed with "R I. W." Damp-Resisting Paint

The Two Great Questions for the Architect

The Architect has two distinct problems in his profession, one of which is the general problem of designing, planning, and otherwise developing the artistic beauty and efficiency of the proposed structure, while the other problem is that of protecting the structure that its efficiency may be maintained for as long a period as possible by retarding deterioration from every cause, and at the same time to afford like protection to the contents of the edifice. This part of the problem is divided into damp-proofing, and protection against corrosion and electrolysis of the steel framework, if the building be of that type.

The dampness to which a building may be subjected varies within wide limits. A foundation may be below the water level of some adjacent body of water, a building may have been erected on piles on marshy ground, or there may be a dozen other causes why water should seep into a basement through the foundation walls, if the building were not protected with "R. I. W. Damp-resisting Paint" according to some specification absolutely suited to the conditions. This represents the extreme of protection against dampness. On the other hand, a building may merely require some protection on the interiors of exterior walls, in order to prevent the percolation of outside moisture. For such



UNITED STATES CUSTOM HOUSE, NEW YORK CITY

Cass Gilbert, Architect

J. C. Robinson & Son, Contractors

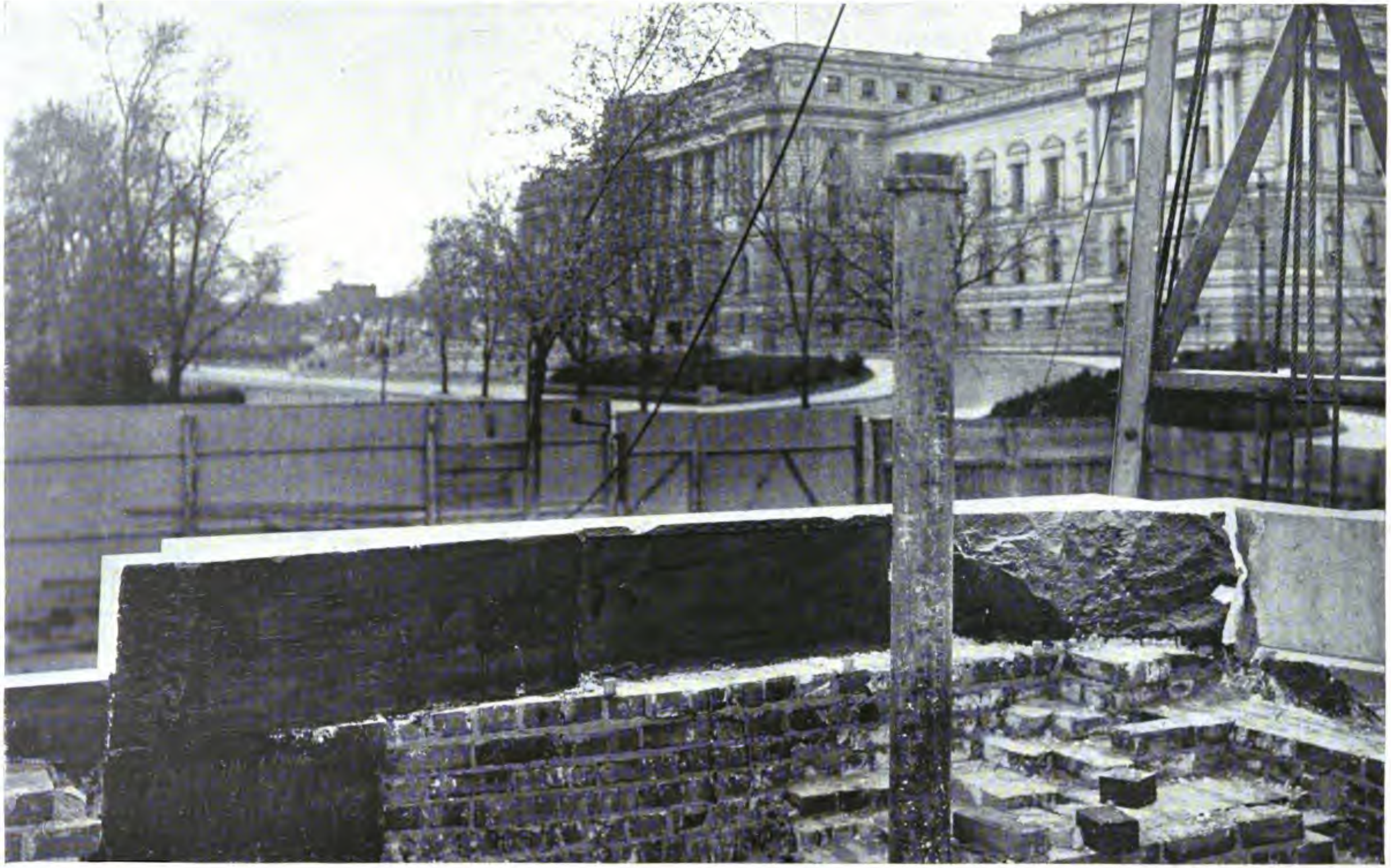
Stone and walls backed with "R. I. W." Damp-Resisting Paint purposes a suitable form of "R. I. W. Damp-resisting Paint" is prepared which will not only damp-proof the walls, but furnish a bond for the rough plaster that will make lathing and furring unnecessary. This damp-proofing question is the first of two great questions for the architect.

UNITED STATES GOVERNMENT BUILDING AND POST OFFICE
CLEVELAND, OHIO

Arnold W. Brunner, Architect
Wm. Bradley & Son, Contractors

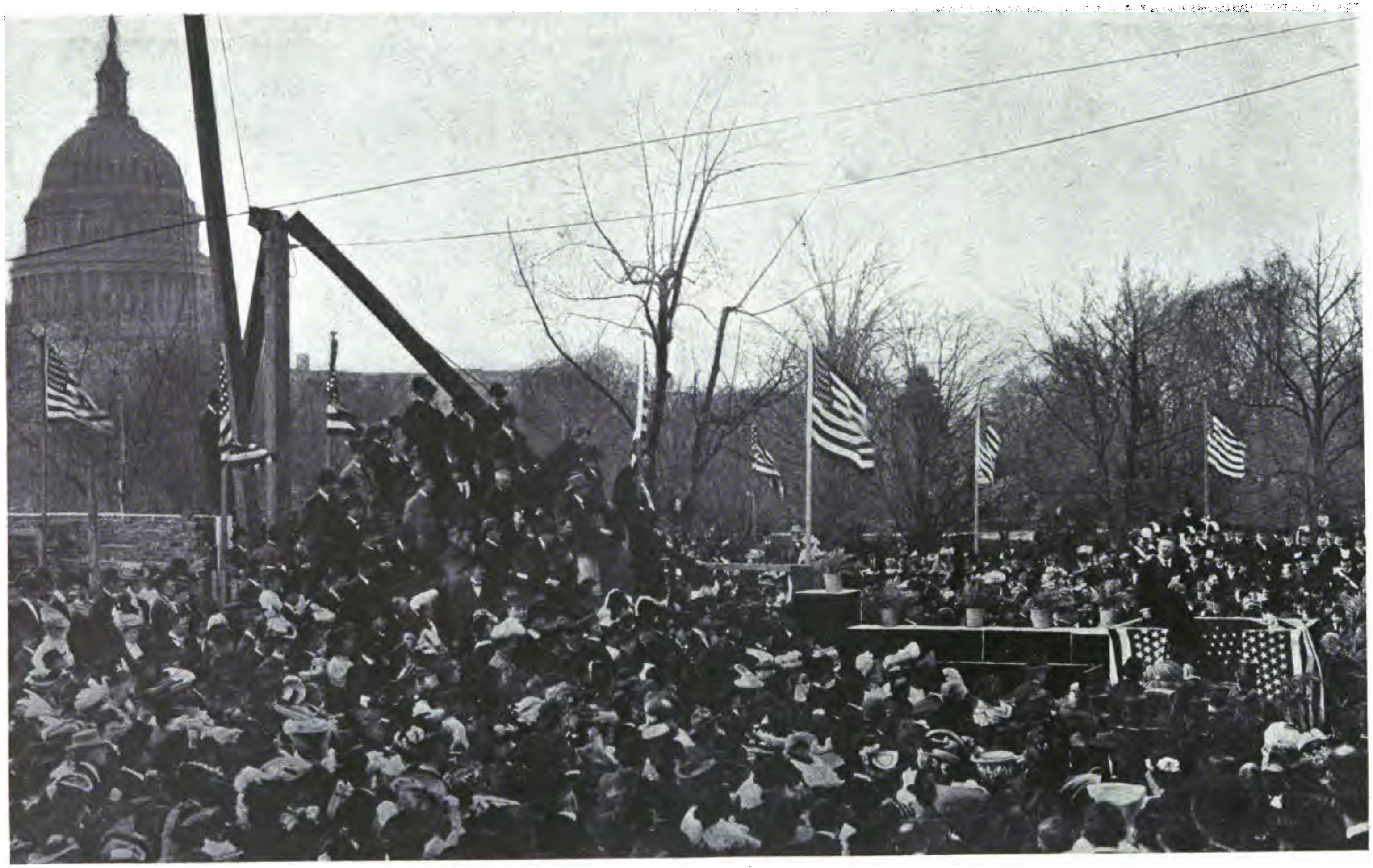
"Tockolith" and "R. I. W." used on all iron pipe in this building

The second question is that of protection against chemical and electrolytic corrosion, the insidious foe to all forms of steel construction. This question is becoming more and more insistent from year to year, as the modern building is honeycombed with lighting and power circuits, telephone circuits, messenger call

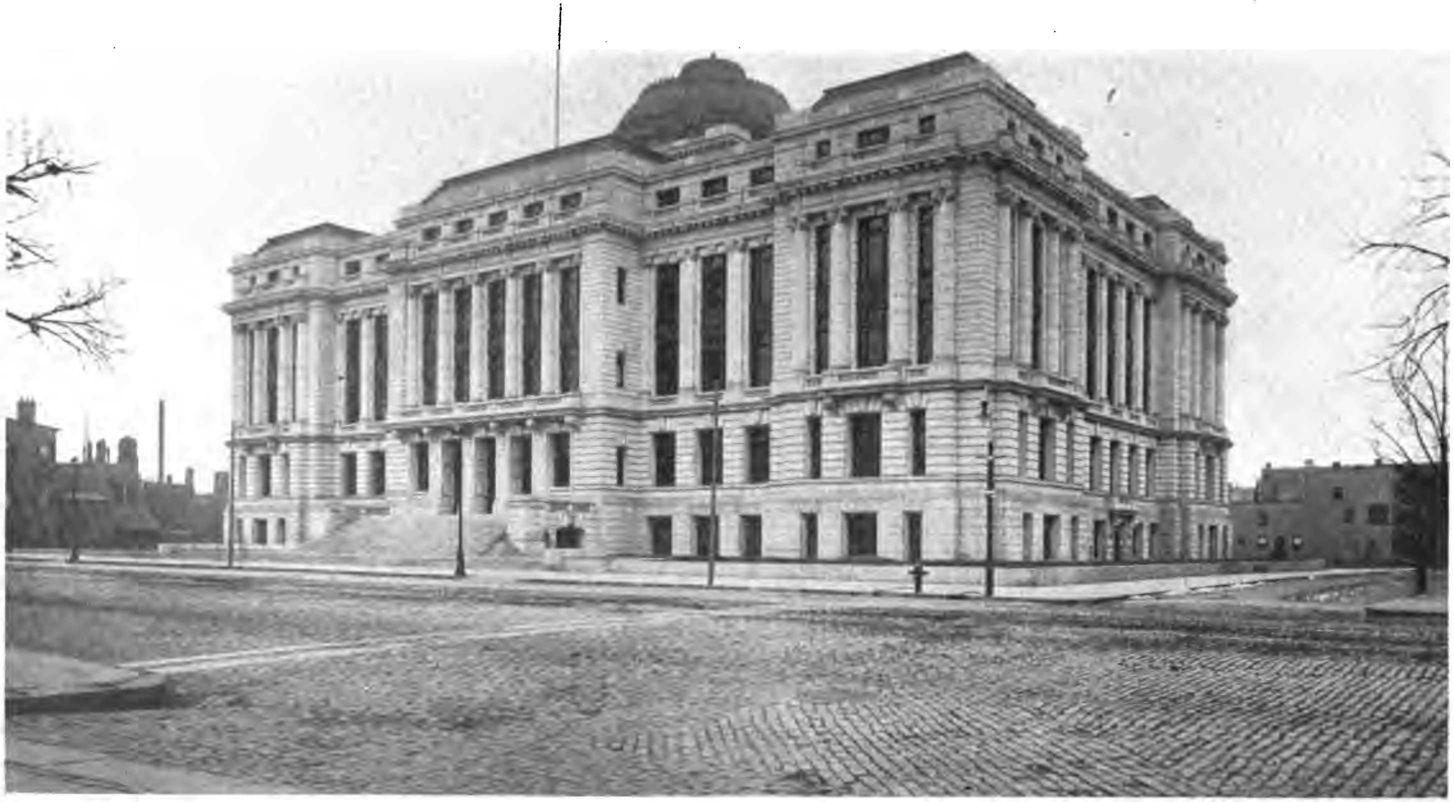


FOUNDATIONS OF THE OFFICE BUILDING OF THE HOUSE OF REPRESENTATIVES, WASHINGTON, D. C.

Illustration shows "R. I. W." Damp-Resisting Paint on back of Limestone



PRESIDENT ROOSEVELT DELIVERING HIS FAMOUS MUCK-RAKE SPEECH AT THE LAYING OF THE CORNER-STONE OF THE OFFICE BUILDING OF THE HOUSE OF REPRESENTATIVES, WASHINGTON, D. C., APRIL, 1906

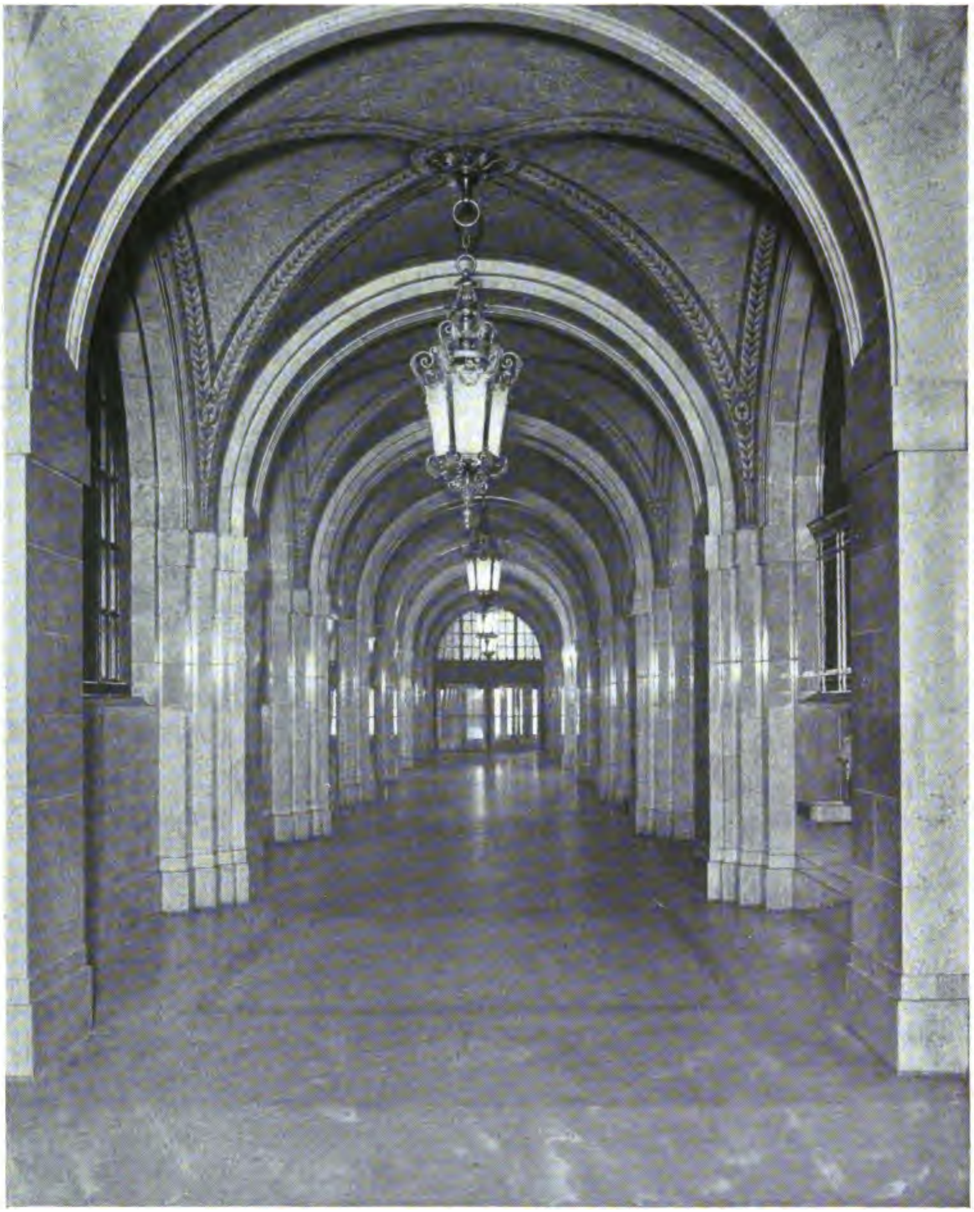


THE NEW CITY HALL, NEWARK, N. J.

J. H. & W. C. Ely, Architects
E. M. Waldron & Co., Contractors
Stone and walls backed with "R. I. W."

MUSEUM OF ART, DETROIT, MICH.
Stratton & Baldwin, Architects
Alex. Chapoton, Jr., Contractor
Damp-proofed with "R. I. W." Damp-Resisting Paint

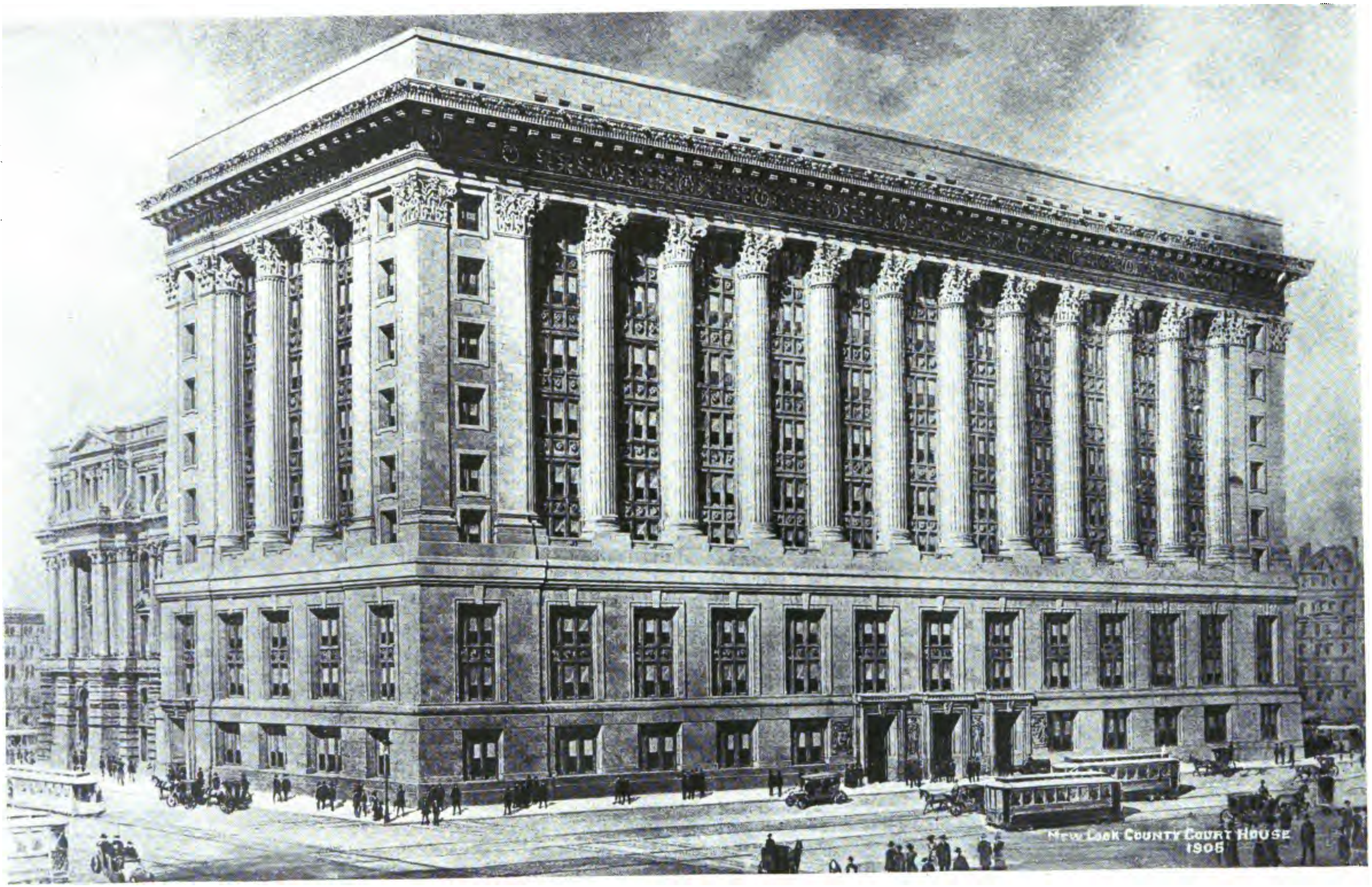
circuits, radiator and other piping systems, and there is a constant leakage of current from the wires to the nearest piping, and thence to the structural steel of the edifice. For this purpose the steel receives a shop coat of "Tockolith," a cement paint, patented, at the mills, which encases the beams in a hard, impenetrable film of cement, and after erection of the material and "touching up" the riveted joints, abrasions on the beams during transit and erection, etc., with "Tockolith," the steel is ready for protection against electrolytic action. This is effected by an application of "R. I. W. Damp-resisting Paint No. 112," which is black in color and applied by means of large flat brushes. This "R. I. W. No. 112" might be compared to liquid gutta-percha. It isolates



CORRIDOR IN NEW COOK COUNTY COURT HOUSE, CHICAGO, ILL.

Holabird & Roche, Architects

Marble arches backed with "R. I. W." Damp-Resisting Paint


NEW COOK COUNTY COURT HOUSE
1906

COOK COUNTY COURT HOUSE, CHICAGO, ILL.

UNITED STATES MINT, SAN FRANCISCO

Roof damp-proofed with "R. I. W." Damp-Resisting Paint

BROADWAY FREE LIBRARY, CLEVELAND, OHIO

Lehman & Schmitt, Architects
Phillip Kirschner, Contractor

"R. I. W." Damp-Resisting Paint used

the steel electrically from all stray currents which may leak from circuits within the building, thus rendering them harmless so far as the framework of the building is concerned.

The purpose of "Tockolith," which we mentioned in our introductory page as being a tri-calcic synthetic cement, is to prevent oxidation of structural steel through gases and moisture. As is well known, cement is one of the most effective and permanent protective materials for steel recognized by Science. A paint made of neat Portland cement and water does not " set," but merely powders off the surface of the iron or steel within an hour or two after application, and " Tockolith " has been devised to create an effective cement paint which will set in the same manner as ordinary cement-concrete, save that it is applied to steel work with a brush, like paint.

" Tockolith " encases steel in a film of impenetrable cement, and has the additional property of stopping oxidation which has commenced in the form of yellow rust. It is said to be the only material which will prevent the progress of oxidation that has gone thus far, all ordinary protectives allowing such oxidation to go on under the film of paint.

" R. I. W. Damp-resisting Paint 112 " serves the purpose of protecting the film of " Tockolith " against disintegration by continuous moisture or from the action of time, in addition to its primary purpose of insulating the steel work from stray electric currents. It also prevents rusty iron of various kinds from staining adjacent stonework with iron oxide, and is often applied to badly rusted piping preliminary to a coating of ordinary oil paint. The " R. I. W. No. 112 " has a two-fold capacity, being not only protective against moisture but also insulating against electrical influences.

It might be said that the insulation of steel in a structure depends on a careful inspection of both the Tockolith coating, which should be touched up in the field that all parts of the steel may be protected and also the " R. I. W. No. 112," which must thoroughly insulate each bar from its neighbor. For this purpose all parts of the beams are gone over, even to the ends and portions which are covered by plates and angle bars. After placing the beams in position, a final coating of " R. I. W. No. 112 " is given the riveted joints.

The question of damp-proofing basements and cellars, foundation walls, etc., brings up the question of a suitable form of " R. I. W. Damp-resisting Paint " vs. Coal Tar. The coal tar methods of damp-proofing have been very popular, and old construction in coal-tar waterproofing, uncovered from time to time, after having been in situ for thirty or forty years, is found "as good as when laid down." This merely proves that coal-tar, *as made by the old methods of gas production* was an efficient waterproofing material. The old methods of manufacturing gas have given way to entirely new processes, and the modern coal tar is of quite a different character from the coal tar produced in the seventies. Waterproofing or roofs prepared with the modern coal tar do not have the lasting power of the old, as the tar now placed on the market is not inert and unchanging, as was its predecessor. If any effective waterproofing is to be done, the materials used must be of an absolutely inert character, and some other material than coal tar has to be looked for. The need was early noted by Toch Brothers, and a special type of "R. I. W. Damp-resisting Paint" was produced to meet a need which is even now unsuspected by many engineers. Where coal tar might be specified in construction for waterproofing purposes, it will be found that "R. I. W. Marine Cement," applied under a similar specification to that prescribed for coal tar will effect a *permanent* protection against outside water.

The life of "R. I. W. Marine Cement" is indefinitely prolonged, as it is a stable and homogeneous compound of gutta-percha like gums which are unaffected by heat or cold, water, gas, or frost. The material is absolutely different from coal tar or hot asphalt in that it forms a permanent bond with the masonry of the foundation walls, and remains tightly attached to the stonework.

Marine Cement is also used for the purpose of damp-proofing the interiors of basements paved with cement, by a simple specification of Waterproofed Felt and "R. I. W. Marine Cement," on tamped rubble, into which nails are driven so soon as rubble is in a condition to receive them. The final sheet of lapped felt receives a coating of "R. I. W. Marine Cement," which is allowed to harden for 24 hours, after which an inch-thick layer of cement is troweled on the wall.

Every structure presents its own problem in either damp-proofing or protection against electrolysis and oxidation, and it is usually impossible to put into definite printed form the exact specification which should be adopted for the best and most economical results. The best plan for the architect or engineer who desires to make use of "R. I. W. Damp-resisting Paint" is to send details of the protection needed by letter, either to Toch Brothers, 320 Fifth Avenue, New York,

FISHER BUILDING AND EXTENSION, CHICAGO

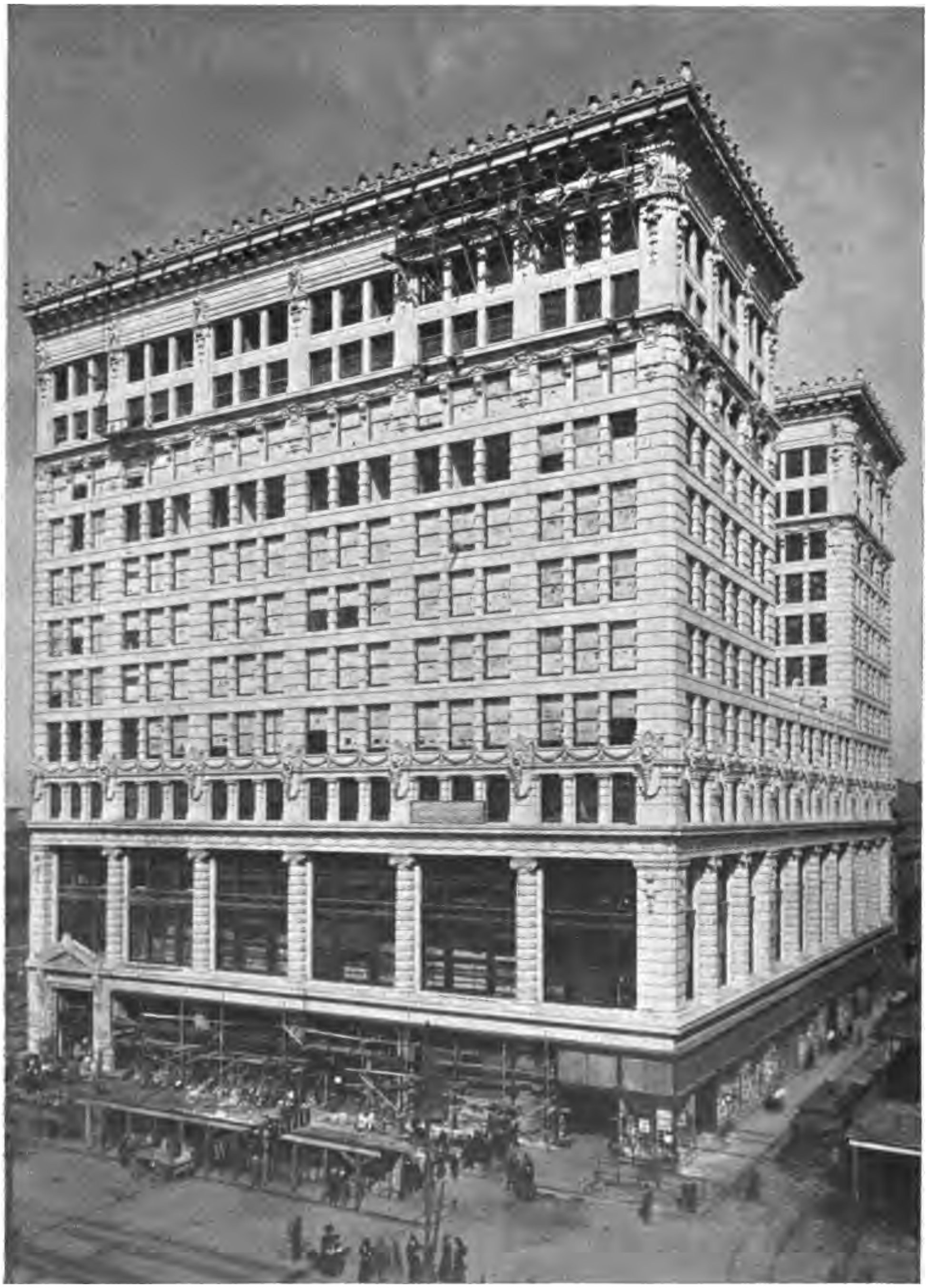
F. J. Weber, Architect
Thompson-Starrett Co., General Contractors
"R. I. W." Damp-Resisting Paint used on interior of exterior walls and on partitions

or to the nearest representative, of which there are thirty-two situated in the principal building centers of the country at time of writing. The point to be understood is that with these materials, used according to specification, an absolute guarantee of effective and permanent protection is possible. With such substitutes as coal-tar pitch of indefinite quality, permanent waterproofing or damp-proofing protection is impossible.

The problem of electrolysis and corrosion is solved permanently on structural steel by the use of " Tockolith," and " R. I. W. Damp-resisting Paint No. 112," while every problem of damp-proofing is solved with equal permanency by means of a suitable application of the proper grade of " R. I. W. Damp-resisting Paint." In ninety per cent. of the structures treated with these materials the ordinary unskilled local labor of the territory can produce effective and perfect results, while a higher grade of skilled labor, accustomed to coal-tar pitch waterproofing, can easily handle the remainder of the waterproofing propositions involved. At all times the experience and advice of the New York office is at the disposal of Architects and Engineers who have either of the " Two Great Questions " to solve.

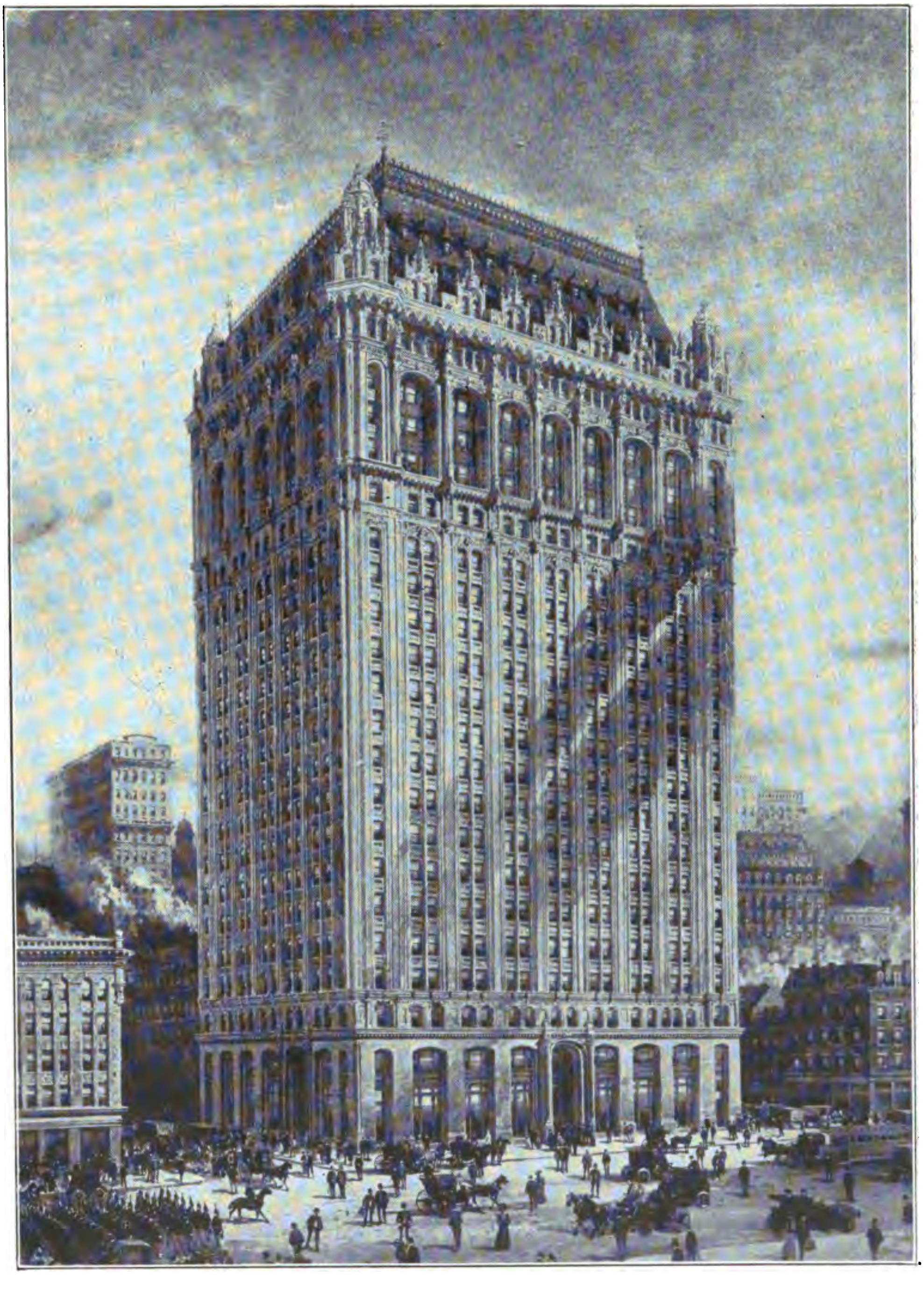
The Office Building

The office building represents the highest architectural effort and the greatest engineering skill concentrated on an edifice which is erected on land worth many hundred dollars the square foot. Whether that land area happens to be bog, or sand, or solid granite—it must not prevent the erection of the proposed building, and the building cannot go anywhere else. The problem must not only be attacked with strong hearts and clear heads, but it must be successfully solved. The architect is confined to a plan which will give the greatest available floor area and cubical contents, in order that there be as much dividend paying space in the building as possible. His decoration and architectural scheme for the adornment of the edifice must be in almost every case based on the decoration of a cubical figure with rectangular elements and rigid lines. These problems need the greatest genius of architect and engineer. And not only that but the whole complicated process of erection and preparation of the structure for occu-



MAISON BLANCHE, NEW ORLEANS

Stone Brothers, Architects
James Stewart Co., General Contractors
"R. I. W." Damp-Resisting Paint used



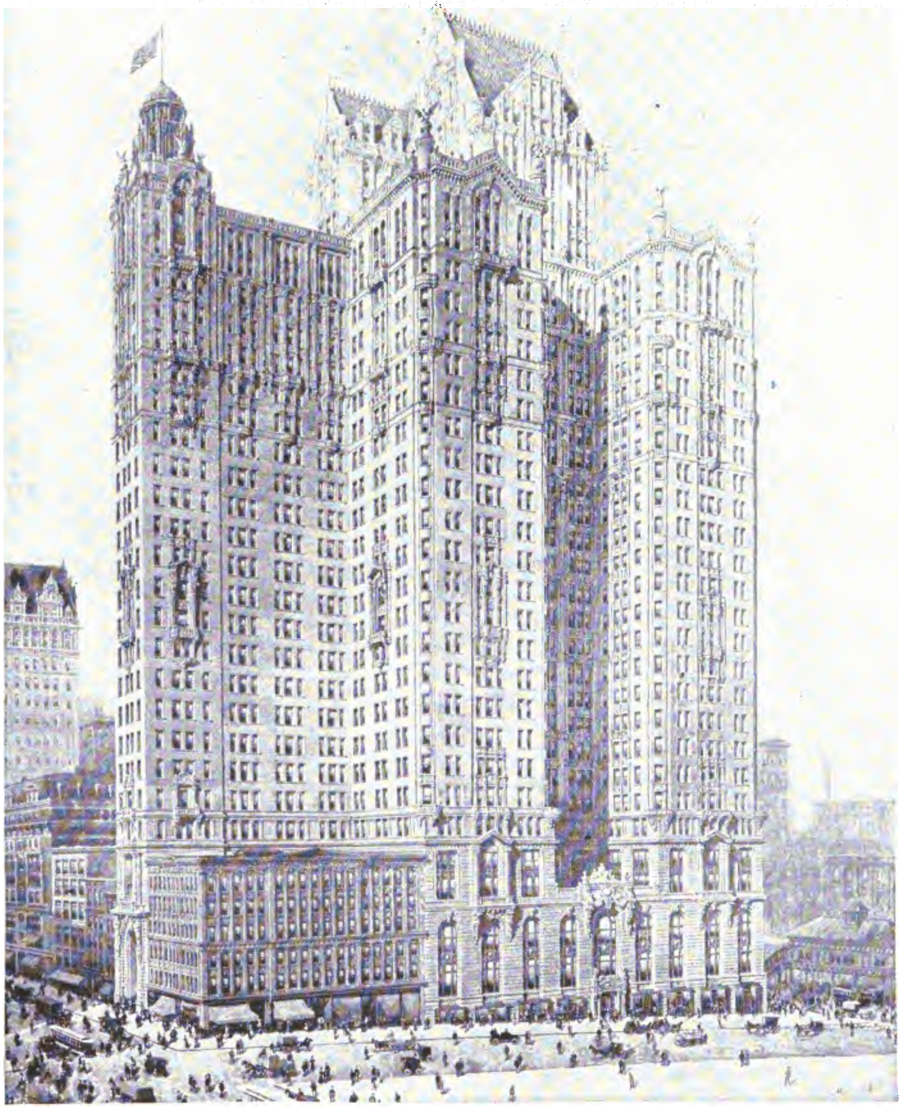
WEST STREET BUILDING, NEW YORK

Cass Gilbert, Architect
John Pierce Co., Contractors
"R. I. W." Damp-Resisting Paint used

TIMES BUILDING, NEW YORK

Eidlitz & Mackenzie, Architects
Geo. A. Fuller Co., Contractors

"R. I. W." Damp-Resisting Paint used



CITY INVESTING BUILDING, NEW YORK

Francis Kimball, Architect
Hedden Construction Co., Contractors

"R. I. W." Damp-Resisting Paint used

McADOO TERMINAL BUILDINGS, NEW YORK

Clinton & Russell, Architects
Geo. A. Fuller Co., Contractors

"R. I. W." Damp-Resisting Paint used

pancy demands the extreme of skill from each of the forty building trades.

This gives some idea of the environment and conditions under which the Toch Brothers preparations find their way into these big buildings for which the best and unfailingly effective is demanded. We venture to state that there are few buildings of any importance which do not receive some portion of their protection against dampness or electrolysis from Toch compounds in preference to many others often tried and found wanting under exhaustive preliminary tests.

The principal feature in the modern office building is its foundation and structural skeleton, on which the whole building depends. Immense weight has to be imposed on columns of steel, and these have to rest upon foundations far below the ground level, perhaps caisson-sunk, or, even, like the Masonic Temple in Chicago, where only marsh was found, and the building "floated" on an immense "raft" of solid steel. These foundations and the skeleton have to be protected against corrosion of every kind. Aside from electrolysis, there is the constant tendency of water, both fresh and salt, to leak in through the foundations; there is sewer gas, coal gas and water gas ready to attack the steel. For such a problem the grillage of the foundation is coated with "R. I. W. Damp-resisting Paint No. 110," an inert and heavy paint compound of gums which are not influenced by either water or any of the corrosive acids mentioned.

The steel work receives a shop coat of "Tockolith," which is touched up in the field, and the framework and riveted joints of the structural skeleton are given a final protective and insulating coat of "R. I. W. No. 112," which differs in covering power and composition from the heavier "No. 110," used on the foundation steel. The steel work on which the whole building depends is thus permanently protected against dampness, and either exterior or interior influences or electrolytic corrosion.

The result of all this is that absolute dependence may be placed on the condition of the concealed beams and columns, with no possibility of failure from corrosion. Each beam is encased in a film of artificial stone, "Tockolith," which grows harder and more dense as the years go by. The "Tockolith" itself is protected from all tendency to disintegration by its protecting film of inert and unchanging "R. I. W. No. 110" or "112."

Damp-Proofing the Singer Tower

We have already mentioned the use of "R. I. W. Damp-resisting Paints" and "Tockolith" for the protection of the steel work which is an essential feature of the modern skyscraper. This covers only a portion of the problem involved in modern office-building construction.

A building of special interest at this time is the Singer Tower, some 612 feet in height, and having forty-one stories. It represents almost the limit of skyscraper construction at the present time, having been the tallest building attempted in lower Manhattan. The tower itself is built on a comparatively small area of ground, and, as a consequence presents peculiarly difficult problems in window openings, wind bracing, etc., subject as it is to the full sweep of gales from the Atlantic. This building has been damp-proofed with "R. I. W. Damp-resisting Paint No. 232," on all four sides of the tower walls, and also has received a treatment against staining. We devote a special chapter to this field in which "R. I. W. Damp-resisting Paints" are indubitably the only dependable aid at the command of the architect.

The tower is subject to the untempered storms coming in from the ocean, in which rain is driven against sides of the structure with terrific force, or in which sleet and snow is carried against it at a speed of forty, fifty or one hundred miles per hour. Owing to the height of the structure, there is considerable elasticity in the steel work under wind stresses, and this, combined with the penetrating character of rain or sleet, driven with immense speed against the walls, makes it a difficult problem in damp-proofing.

The "R. I. W. Damp-resisting Paint No. 232" maintains its elasticity permanently under all conditions of temperature, and forms the only suitable compound applicable to the conditions existent on the structure. All exterior walls received a thorough application of "R. I. W. No. 232" on the interior side of the brick and stonework forming the walls, with special reference to the window openings and window casings. This work was done by ordinary labor, in spite of the important character of the damp-proofing, and ordinary labor was made possible by the absolute fitness of the compound for the work demanded.

This matter of damp-proofing the walls was, however, only one end achieved by the use of " R. I. W. Damp-resisting Paint." The paint used has the special property of forming not only a damp-proof element in the wall, through which no exterior water can penetrate under any condition, but also forms a bond between brick and rough plaster that makes unnecessary the labor or space needed for lathing and furring. The inch or two saved in wall-thickness by this method is well worth saving under the conditions of rental prevalent in the economics of office-building operation, and was especially desirable in the Singer tower, owing to the high rentals involved, and the circumscribed area on which the tower was built. " R. I. W. Damp-resisting Paint No. 232 " is so compounded that it remains flexible and tacky for a considerable period after application. Its flexibility is never lost. Upon application to a wall, a portion of the compound is absorbed into the brick, forming a close and permanent bond between the plaster and the wall which it damp-proofs. A continuous protective film remains on the surface of the wall, and the film itself is " tacky." Brown plaster, the scratch coat, is troweled directly on this tacky film, and as the plaster sets, a portion of the " R. I. W. Damp-resisting Paint No. 232 " is also absorbed into the plaster, binding the plaster permanently and solidly to the wall on which it is placed.

As an experiment a terra-cotta tile was coated with " R. I. W. No. 232," a coat of brown plaster was applied the next day, and, three weeks afterwards a cold chisel was used to separate the three elements without success. Upon testing the strength of the bond in this way, it was found that the chisel would chip away both plaster and terra-cotta without their separation. At no point was it possible to remove the plaster from the surface of the unglazed, unbaked terra-cotta.

The damp-proofing of the Singer tower had still another element of interest for architects. This was the protection of the grey limestone panels against staining and discoloration.

SINGER BUILDING AND TOWER, NEW YORK

Ernest Flagg, Architect

"R. I. W." Damp-Resisting Paint used on the inside of exterior walls of tower

To prevent such staining, all cut stone is " backed " on the five unexposed sides with a coating of " R. I. W. No. 110," which is inert, waterproof, alkali-proof, acid-proof, and rust-proof. Such was done on the limestone panels in the Singer tower, each stone having been painted in this way at least twenty-four hours before it was placed in position. The " No. 110 " resembles the " No. 232 " in that it forms a bond for mortar, but has a different covering capacity, and is specially adapted to the peculiar needs of such protection. After setting the blocks, the mortar pointing was given a coat of the ''No. 110.'' Each block of limestone was entirely isolated from its neighbor; the interior side of the stonework presented an unbroken area of " R. I. W. No. 110 " through which no interior acid, alkali, rust or moisture could penetrate to the stone; the exterior was absolutely protected against any influence except the natural mellowing influence of exposure to the weather.

These are the three elements furnished by " R. I. W. Damp-resisting Paint " in the damp-proofing of the Singer tower walls; an absolute, permanent, elastic interior film of paint which neither water nor acid can penetrate; an automatic permanent bond between brickwork and rough plaster which saves the space, cost, time and labor of furring; and a permanent insulation of each block of stone in the tower, not only from its neighbor but from all interior influences tending to discolor or stain the stonework. Of course, these same elements apply in other construction of the kind. The Singer tower is only an extreme type of damp-proofing under conditions of especial stress from storms and vibration.

Government and Municipal Buildings

In the Government Building, where unlimited capital is at the command of the builder, or where the architect and engineer is influenced only by absolute suitability of the materials to be used, one might easily find a criterion by which the quality of the Toch compounds for their advocated uses might be judged.

If it be found that " R. I. W. Damp-resisting Paint " has been specified for some particular use, the outsider may depend upon it that that material is the best for the purpose to be obtained within the length and breadth of the United States; that it has undergone rigorous tests; that it has been tried and proven. The Government Building is an edifice in which experimental protections have no place.

Experimental tests of this character do not apply so rigidly to either State or municipal structures as they do to Federal buildings, but, nevertheless, such examples are also a criterion that the best engineering and architectural talent has been applied to their selection of protective materials and compounds.

Architecturally speaking, Federal buildings present a radically different type of construction from the office building. In the office building, steel-frame construction is adopted, and the effort is to construct the edifice at the lowest cost per cubic foot of contents. The Government building on the other hand usually is a structure of solid stone, of the finest architectural design, built to give lasting service and to house its contents safely. Every effort is usually made to beautify it, and questions of actual first cost receive a liberal interpretation in accordance with circumstances.

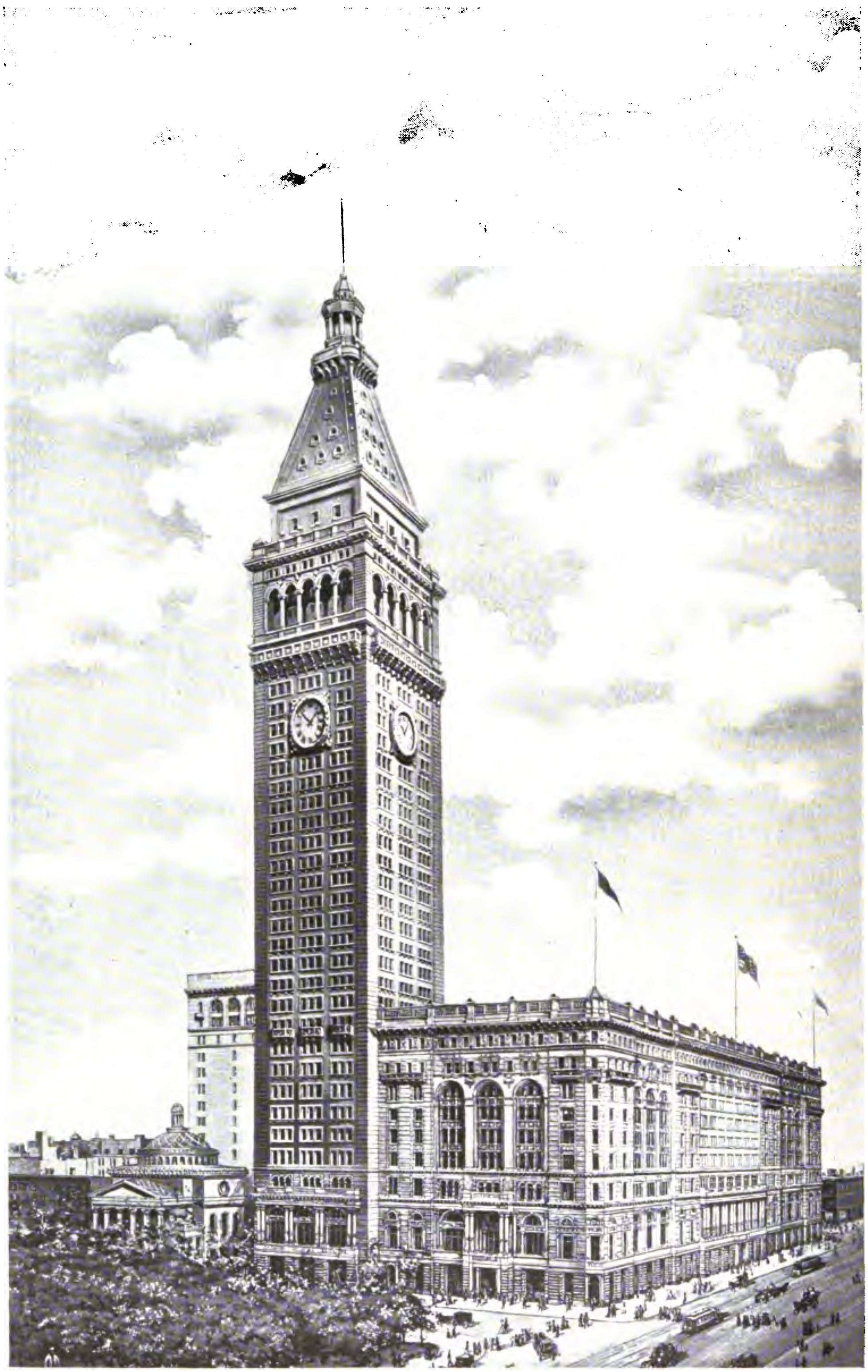
" R. I. W. Damp-resisting Paint " becomes available for damp-proofing the walls to avoid furring; is used to isolate the blocks of fine cut stone to avoid staining; is used in its heavy form of " Marine Cement " to waterproof and damp-proof the foundations; is used to protect and make the roofs watertight; is used as a base for scratch coats of brown plaster; is used on iron piping systems to prevent rusting of the metal, either from condensation or leakage; is used as a waterproof cement in which mosaic is laid; is used to insulate electric wiring; is available in various forms for protection of metal, wood, stone, brick, or cement, exposed to the weather or in sheltered parts of the building; is used to damp-proof rooms for the storage of records and documents in order that they may not be hurt by dampness; is available to damp-proof basement walls; is used under floors of cement or wood for the purpose of making such floors absolutely damp-proof. There are almost limitless applications for which it serves the purpose perfectly, and with certainty of permanent effectiveness.

In the Government Building the fine cut stone especially selected for architectural effect is isolated in the manner spoken of earlier with a protective coating of " R. I. W. Damp-resisting Paint No. 110 " to prevent staining.

Where structural steel enters into the building our " Tockolith " paint is employed to prevent deterioration of the beams and girders from chemical or other corrosion, being applied to the steel immediately it is completed at the mills, and before it has had an opportunity to gather rust.

" Cement Filler " and " Cement Floor Paint," both patented compositions, are used to give longer wear to cement flooring. These compounds enter into chemical union with the cement and transform it into a vitreous artificial porcelain, which acquires high polish from use. Rooms containing valuable documents are treated with " Cement Filler," and the floor sheds no appreciable dust or particles of lime and silica. A mere wiping of the floor surface with a damp mop is sufficient to keep it in a perfect state of cleanliness at all times.

Some of these public buildings are illustrated in the columns of these and adjoining buildings. The frontispiece shows the New York Public Library, which is damp-proofed with " R. I. W. Damp-resisting Paint No. 232," placed on all terra-cotta walls, partitions and ceilings. It forms the bond between the terra-cotta and the scratch coat of brown plaster. The storage room, containing forty lineal miles of steel shelving, is protected against dampness by this application of " R. I. W. Damp-resisting Paint No. 232." The Detroit Museum of Art, also illustrated in the book, is treated with an application of " R. I. W. Damp-resisting Paint No. 232 " on the inside of outside walls before plastering.



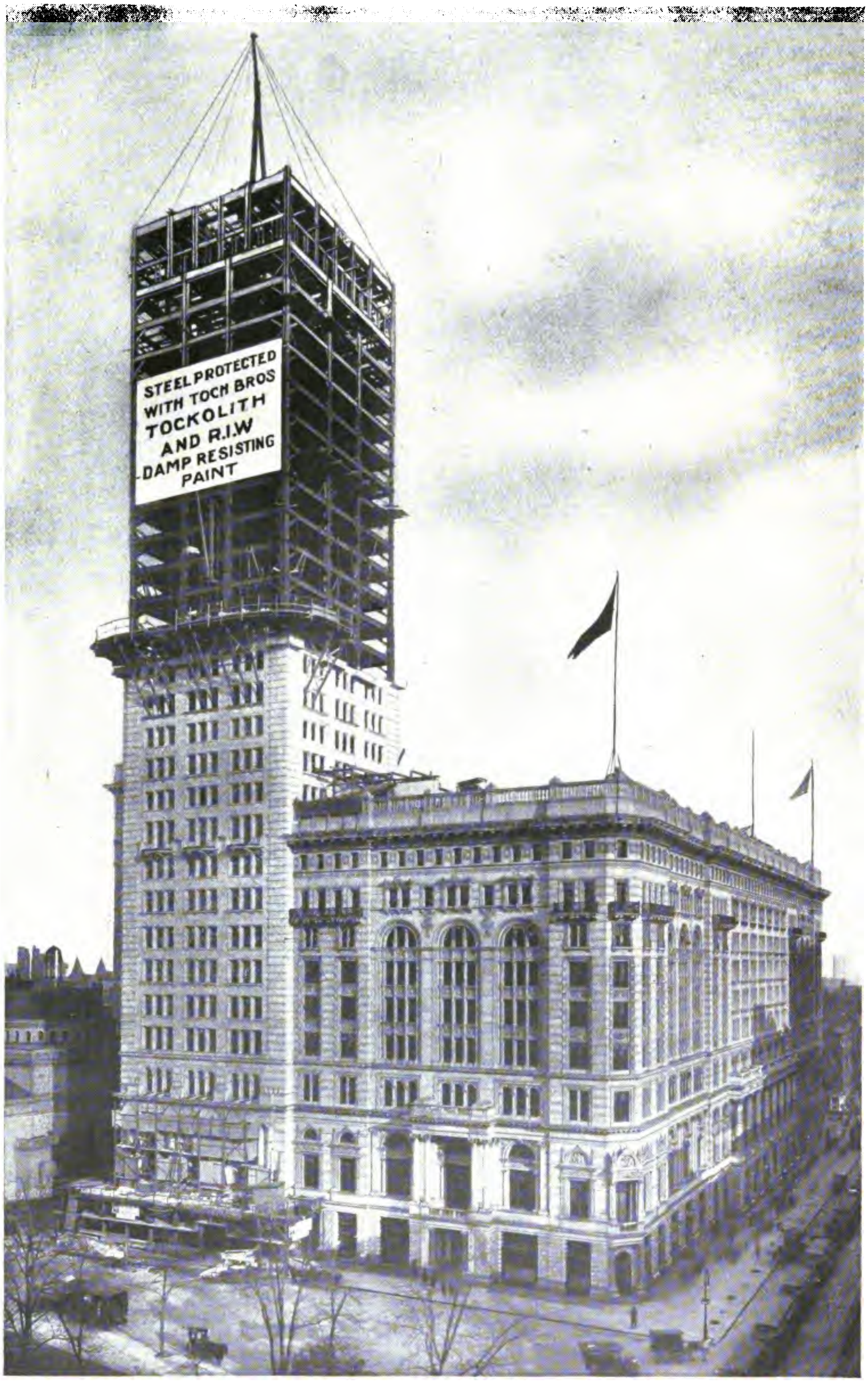
METROPOLITAN LIFE INSURANCE COMPANY BUILDING, NEW YORK

N. LeBrun & Son, Architects Hedden Construction Co., Contractors
Steel protected with "Tockolith" and "R. I. W." No. 112. Interior of walls protected with "R. I. W." No. 232. Largest Damp-Proofed Office Building in the World

The Newark, N. J., City Hall is an example of the protection of cut stone against staining from internal oxides and other products of chemical action, with the double result of also damp-proofing the walls permanently, and forming a strong bond between rough plaster, mortar and the stone. The maximum internal space is made possible by the avoidance of furring or lathing on the interiors of exterior walls.

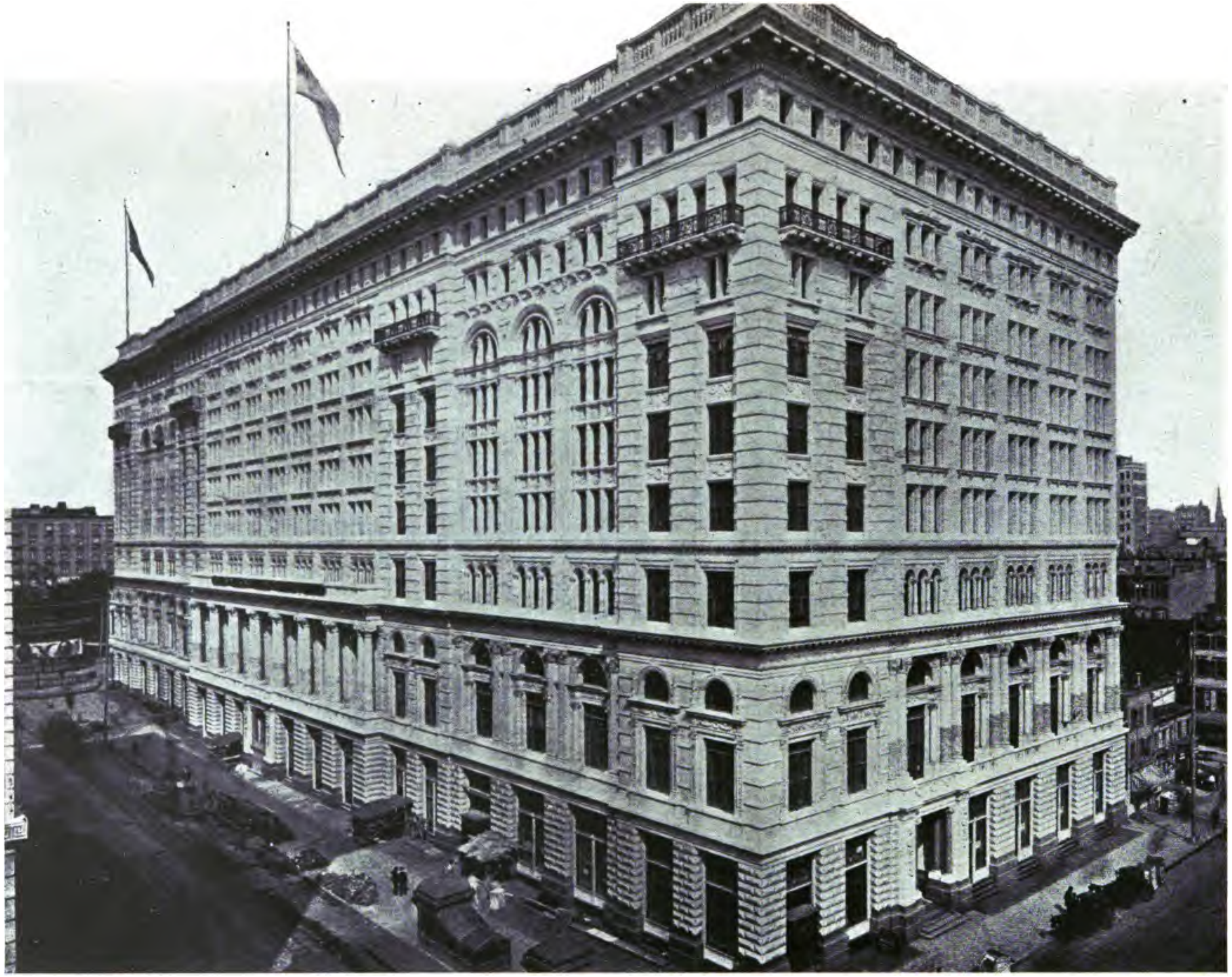
METROPOLITAN LIFE BUILDING

In course of construction, 1903



METROPOLITAN LIFE BUILDING TOWER

In course of construction February 18, 1908
The upper girders of the steel work show the gray shop coat of "Tockolith"
Lower down the black "R. I.W." Damp-Resisting Paint No.112
has been applied



FOURTH AVENUE WING OF METROPOLITAN LIFE BUILDING

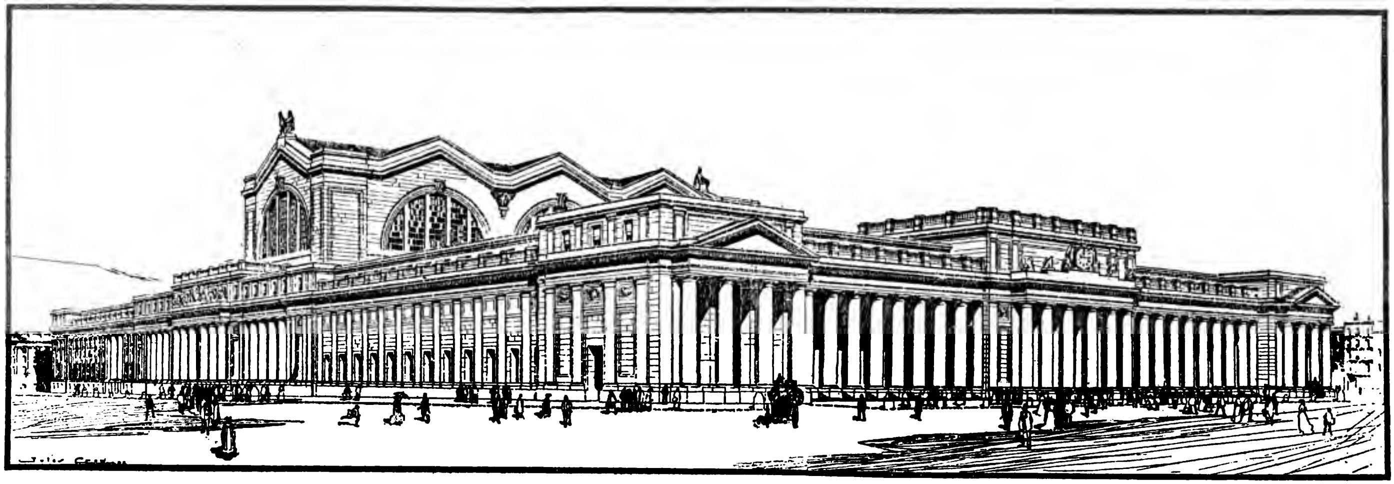
Damp-proofed with "R.I.W." Damp-Resisting Paint

Erected 1903

STREET RAILWAY TERMINAL BUILDINGS, MILWAUKEE, WIS.

Protected with "R. I. W." Damp-Resisting Paint

A FEW RAILWAY STATIONS PROTECTED WITH TOCH BROTHERS' PAINTS



THE PENNSYLVANIA TERMINAL BUILDINGS, NEW YORK

McKim, Mead & White, Architects
G. A. Fuller Co., Contractors

(In course of construction)

NEW UNION DEPOT, BIRMINGHAM, ALA.

P. Thornton Mayre, Architect
Oliver Sollit Co., Contractors

Protected with "R. I. W." Damp-Resisting Paint

PENNSYLVANIA TERMINAL, NEW YORK
(Showing Excavation)

Westinghouse, Church, Kerr & Co., Engineers
Jobson-Hooker Co., Steel Erectors

Steelwork protected with "Tockolith" and "R. I. W." Damp-Resisting Paint
25,000 gallons of Toch Brothers' Paints used on this work

The Railway Station

The railway terminal presents some problems of its own which are met in the best manner, and only fully met by Toch Brothers' "Tockolith" and the various forms of "R. I. W." Damp-resisting Paint.

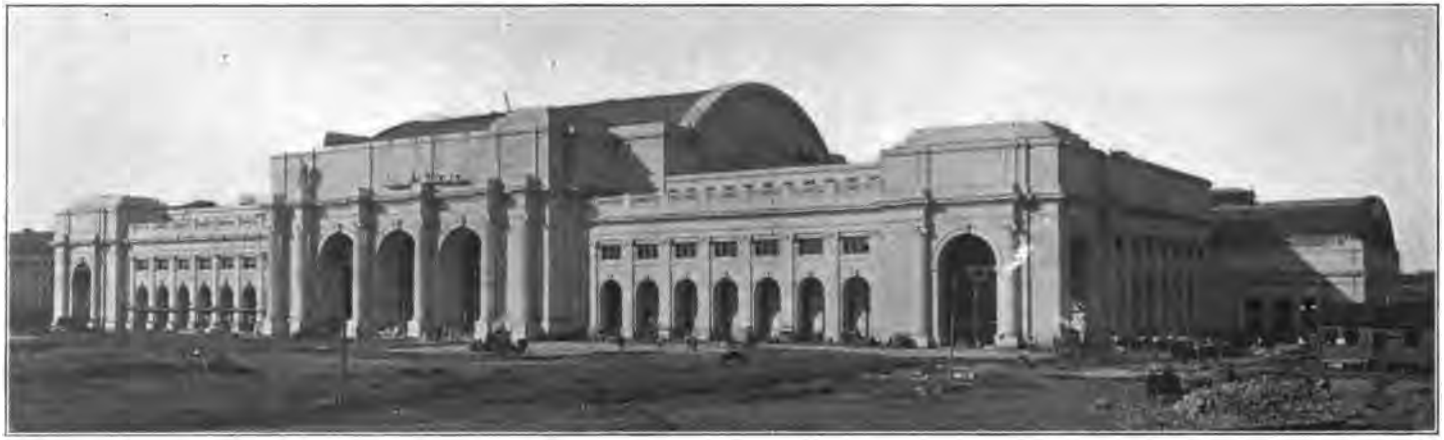
One of these special problems is the continuous presence of locomotive fumes in the station itself. These fumes, together with quantities of condensing steam, have a tendency to corrode the steelwork of the "shed" by condensation on the cold metal. This metal has to be protected, and the proper protection is "Tockolith" overpainted with "R. I. W." Damp-resisting Paint No. 49.

The second special problem is one of vibration. The movement of heavy trains in and out of the station cannot but tend to strain the foundation and walls in some degree however small. Now, if ordinary damp-proofing materials are used, which become brittle with frost, there will be a tendency to crack, and allow the percolation of water into the foundations and walls. For this purpose, the Toch Brothers' "R. I. W." Marine Cement and other "R. I. W." compounds will be found elastic under vibration, even during the coldest weather, and therefore permanent in their protection of the terminal.

Another special problem is coming more to the front with the adoption of electrically-operated terminals, and is due to the electrolytic corrosion of the structural girders from stray current leaking from the third rail of the terminal track, or from overhead trolley wires. Here, again, the Toch Brothers' "R. I. W." compounds are available for the insulation of each single girder from all its fellows by a coating of the specified paint. This overcomes the serious rapidity of deterioration in such structures, which would become more apparent were close examination to be made of the steel work.

Concrete walls and brick in the train-end of the terminal are susceptible to a treatment with "Konkerit," over which paint may be applied in any desirable color without scaling off. This permits annual renovation of this portion of the terminal. "Konkerit" is the ideal material to be used on concrete construction.

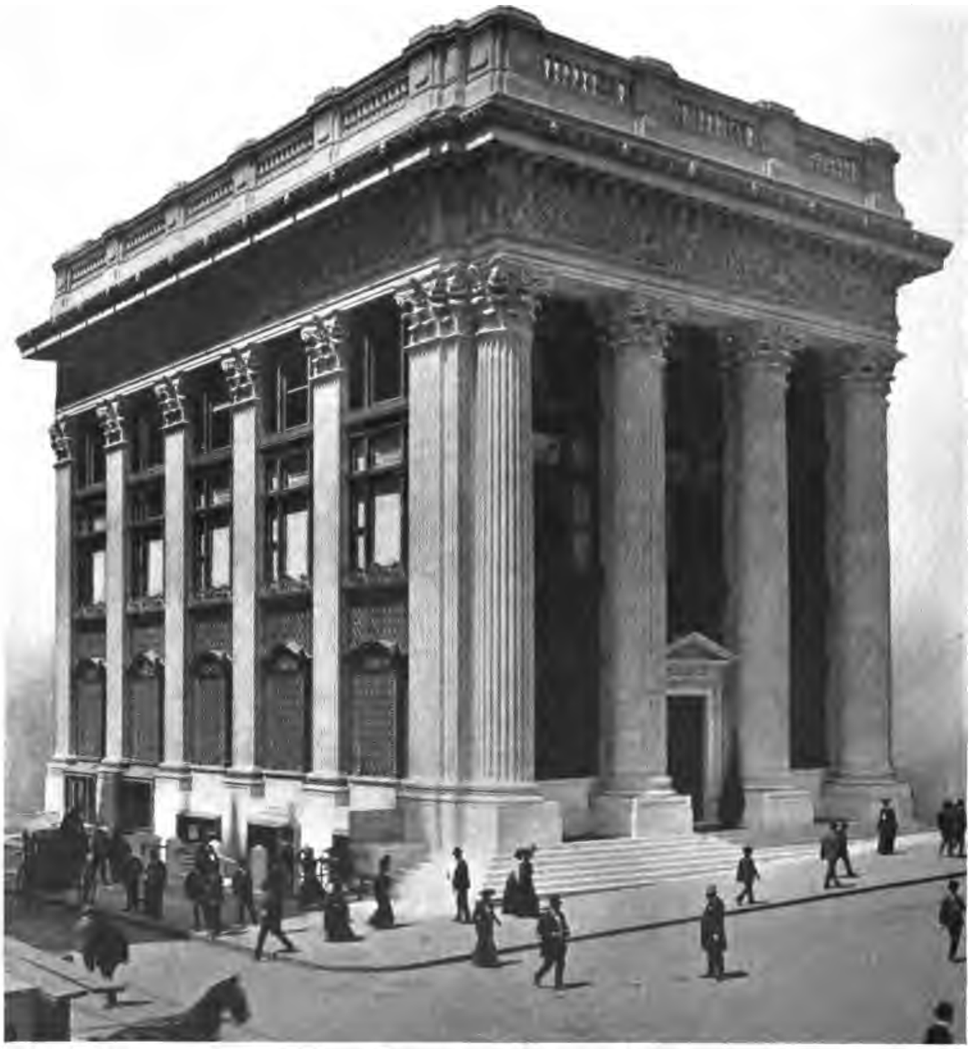
We import "Fluate," known also as "Lockpore," a chemical dissolved in water. It is colorless and hardens the stone. We are agents in this country, and know it has been generally used in Europe, among other structures, on the Parliament Buildings, London, Eng., and the Arc de Triomphe in Paris.



UNION DEPOT, WASHINGTON, D. C.

D. H. Burnham & Co., (Chicago), Architects
Thompson-Starrett Co., Contractors
Protected with "R. I. W." Damp-Resisting Paint

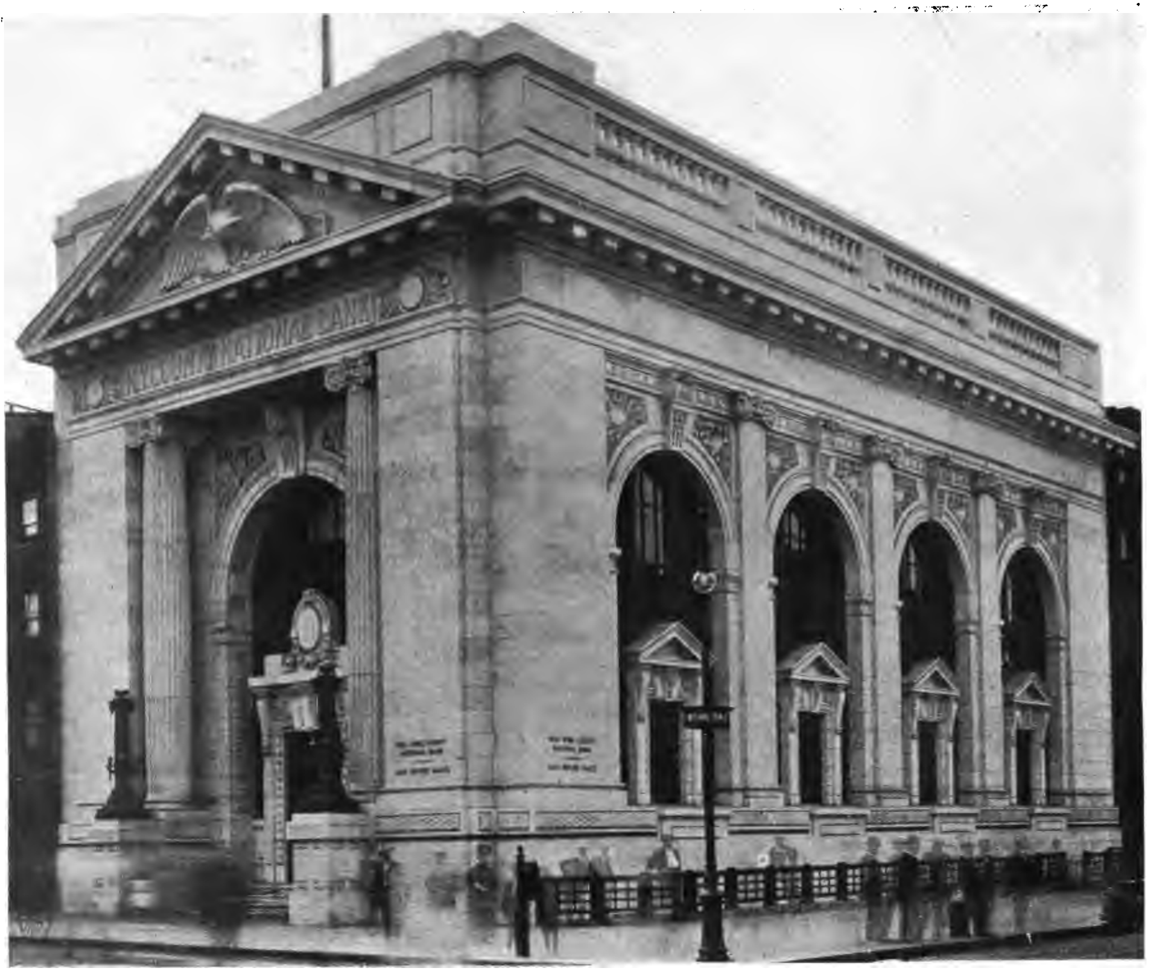
TYPICAL BANKS AND BANK BUILDINGS PROTECTED WITH TOCH BROTHERS' PAINTS



KNICKERBOCKER TRUST CO. BUILDING, NEW YORK

McKim, Mead & White, Architects
Charles T. Wills, General Contractor

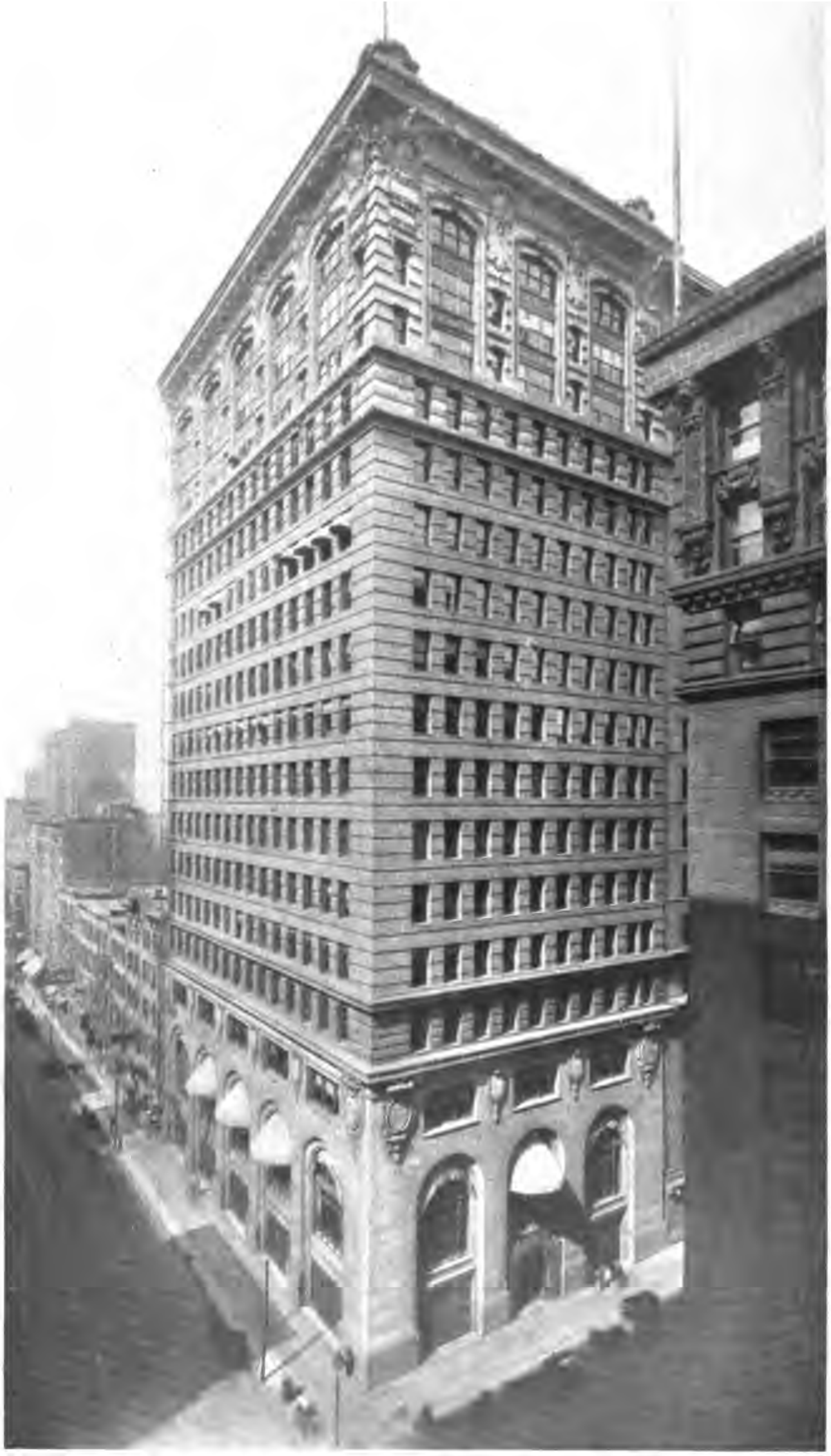
Protected against staining with "R. I. W." Damp-Resisting Paint



NEW YORK COUNTY
NATIONAL BANK

R. L. Daus, Architect

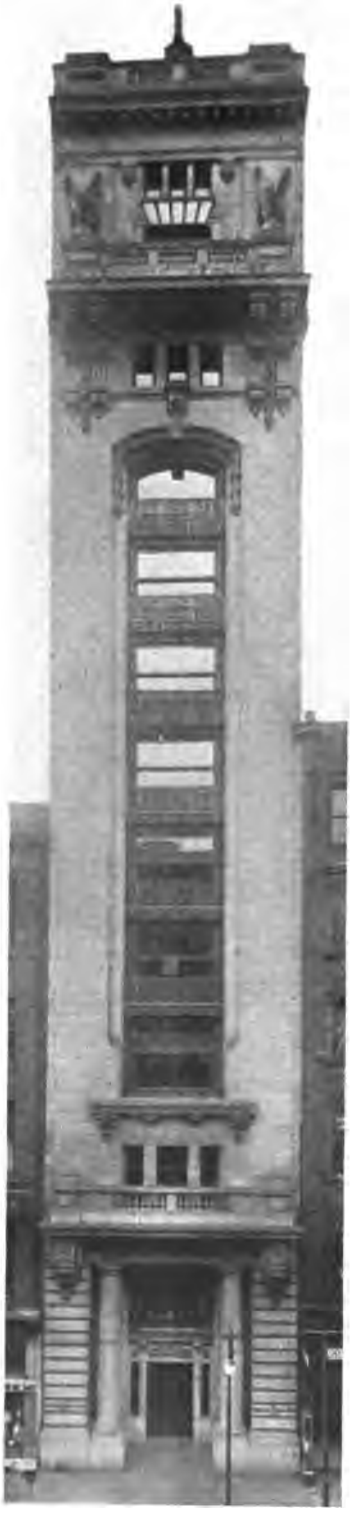
Protected with "R. I. W." Damp-Resisting Paint



AMERICAN TRUST BUILDING, CHICAGO
Jarvis Hunt, Architect McNulty Bros., Plastering Contractors
Damp-proofed with "R. I. W." Damp-Resisting Paint

TRADERS' BANK BUILDING, TORONTO, CANADA

Carrere & Hastings, Architects F. S. Baker, Associate Architect
V. J. Hedden & Sons Co., Contractors
Protected with "R. I. W." Damp-Resisting Paint

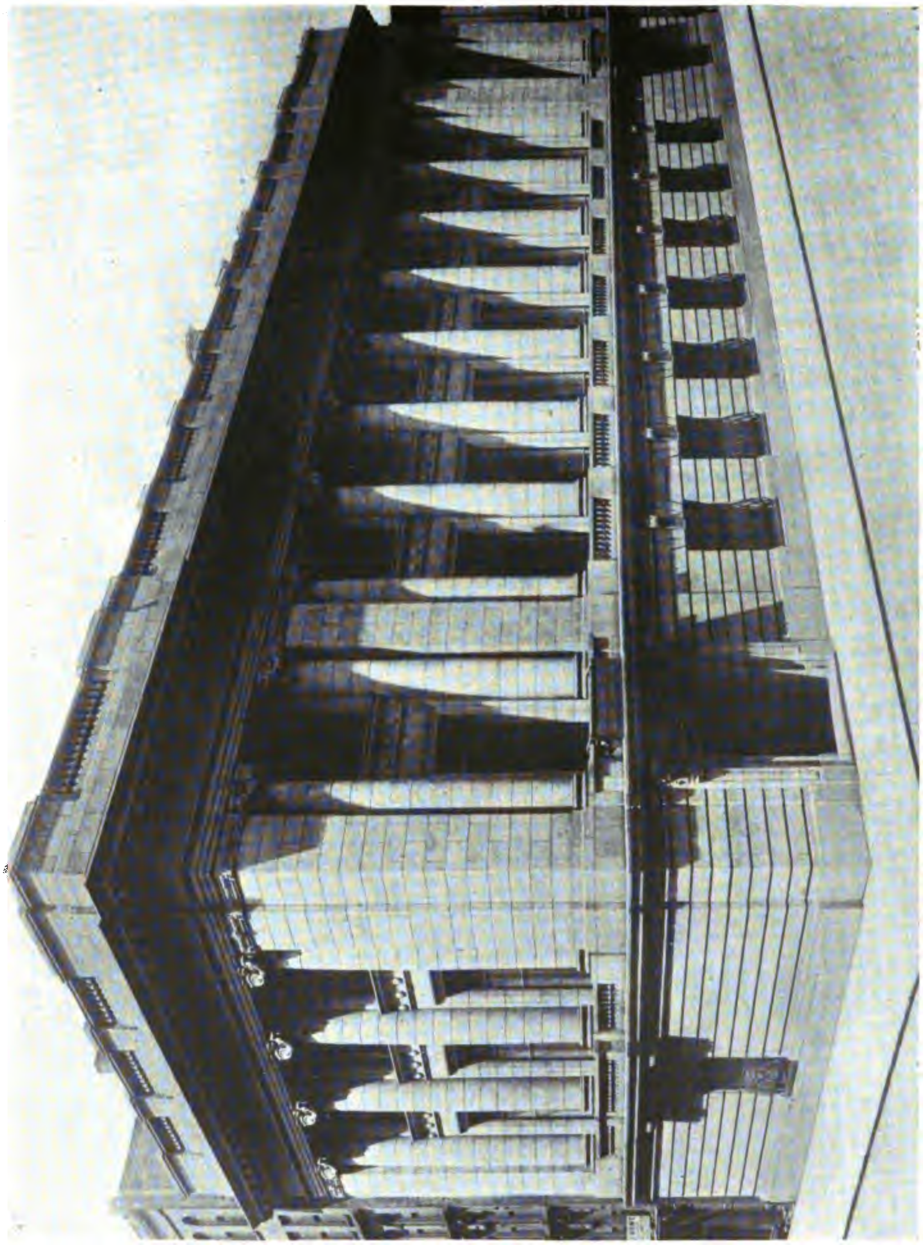


GUARDIAN SAVINGS AND TRUST BUILDING, CLEVELAND

J. Milton Dyer, Architect
John Gill & Son, Contractors

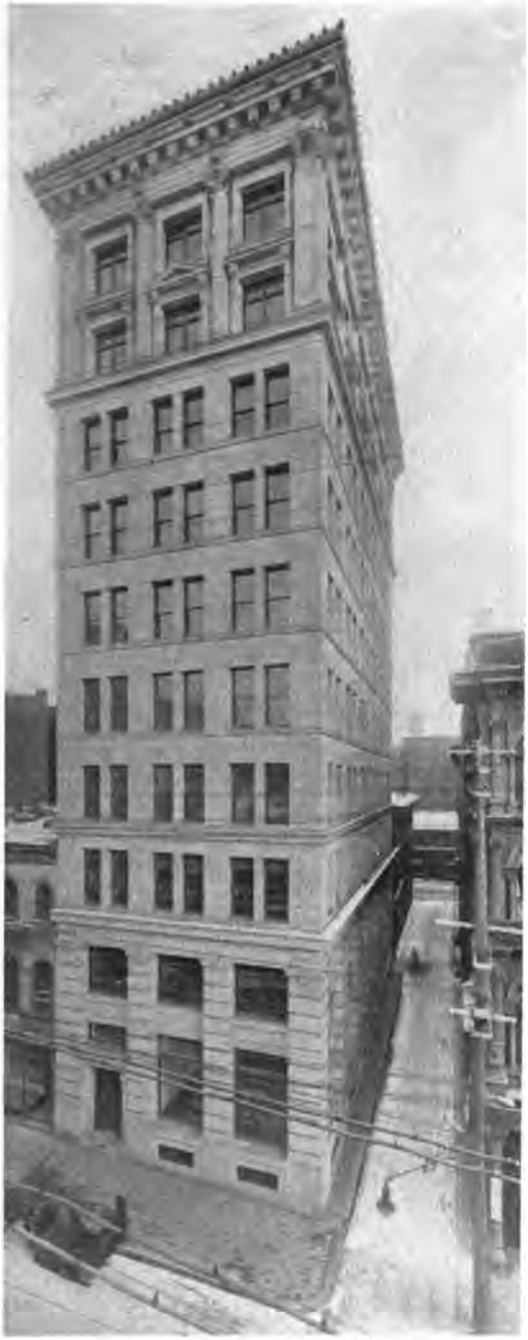
Protected with "R.I.W."Marine Cement and "R.I.W." Damp-Resisting Paint

BANKS



NORTHERN TRUST COMPANY BANK, CHICAGO

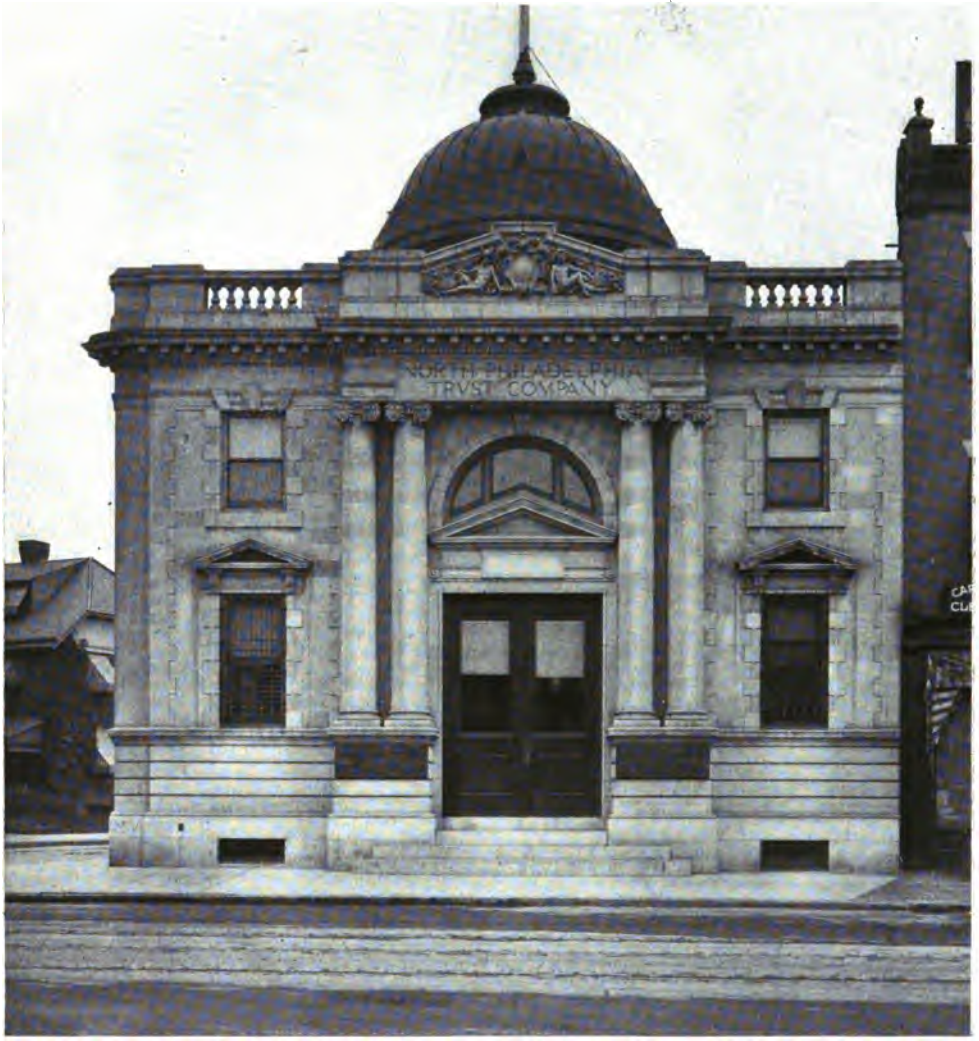
Frost & Granger, Architects
Thompson-Starrett Co., Contractors



BANK OF OTTAWA BUILDING, MONTREAL

Herbert Stone, Architect

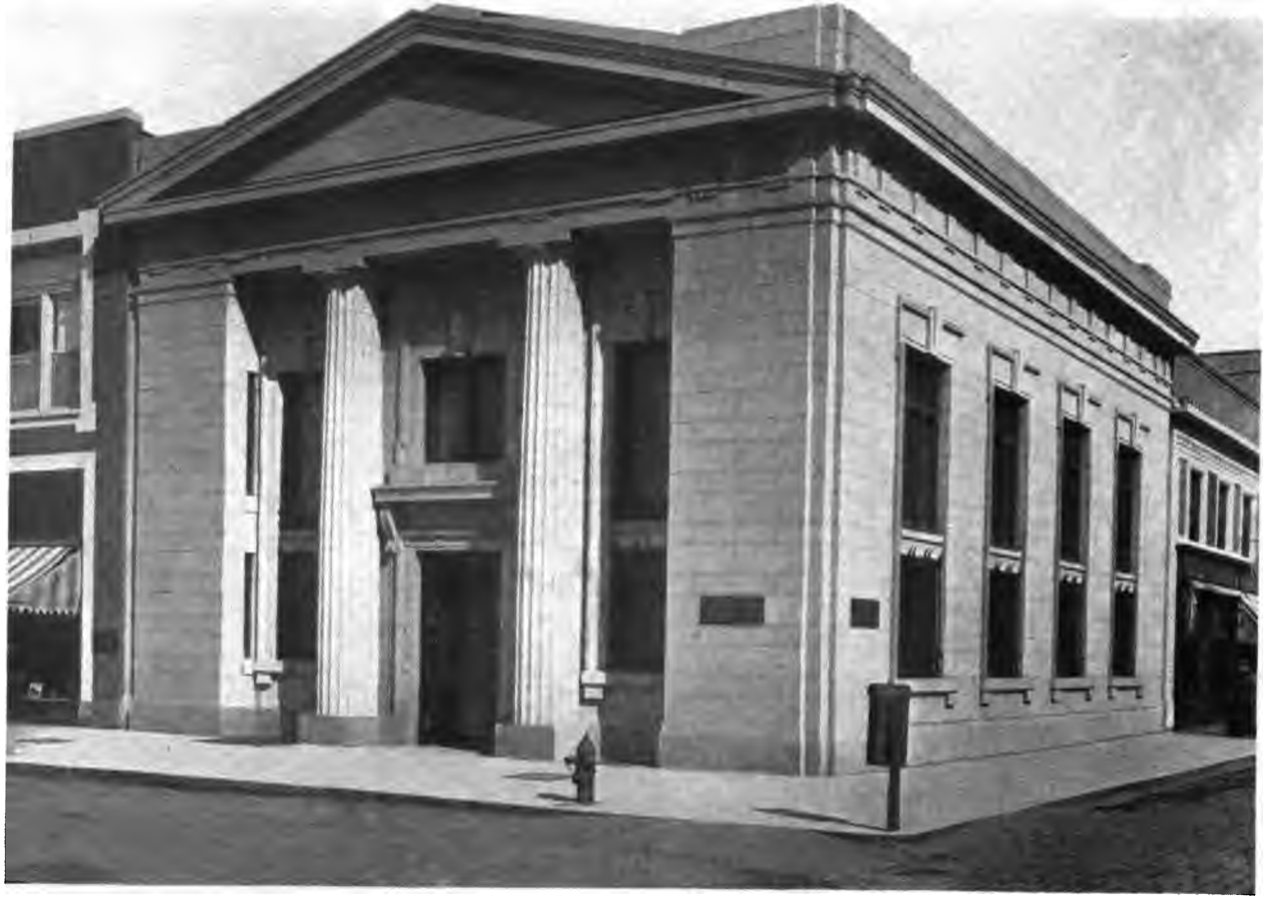
Protected with "R. I. W." Damp-Resisting Paint and Liquid Konkerit



NORTH PHILADELPHIA TRUST COMPANY, PHILADELPHIA

Carl P. Berger, Architect

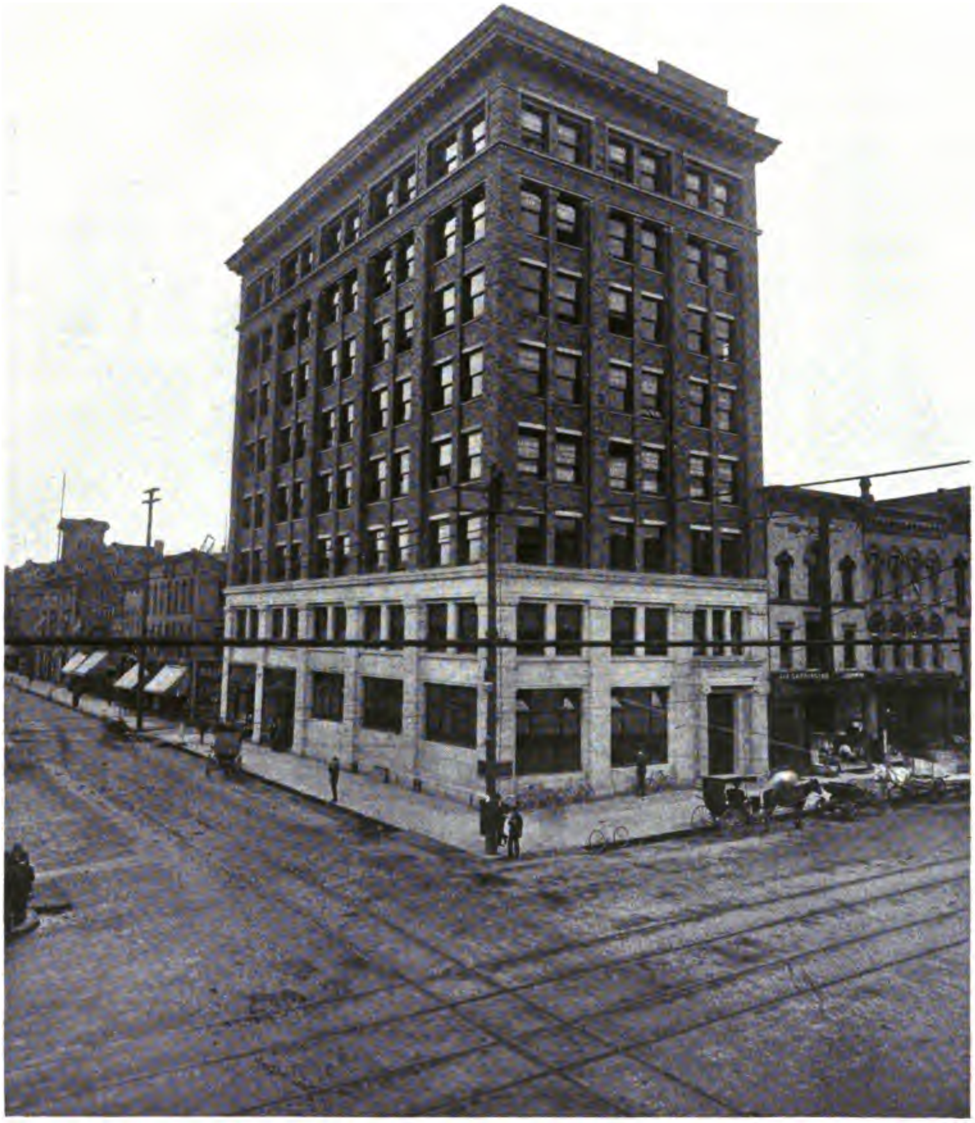
Protected with "R. I. W." Damp-Resisting Paint



STATE BANK OF
EVANSTON,
EVANSTON, ILL.

Rogers & Woodyat, Architects

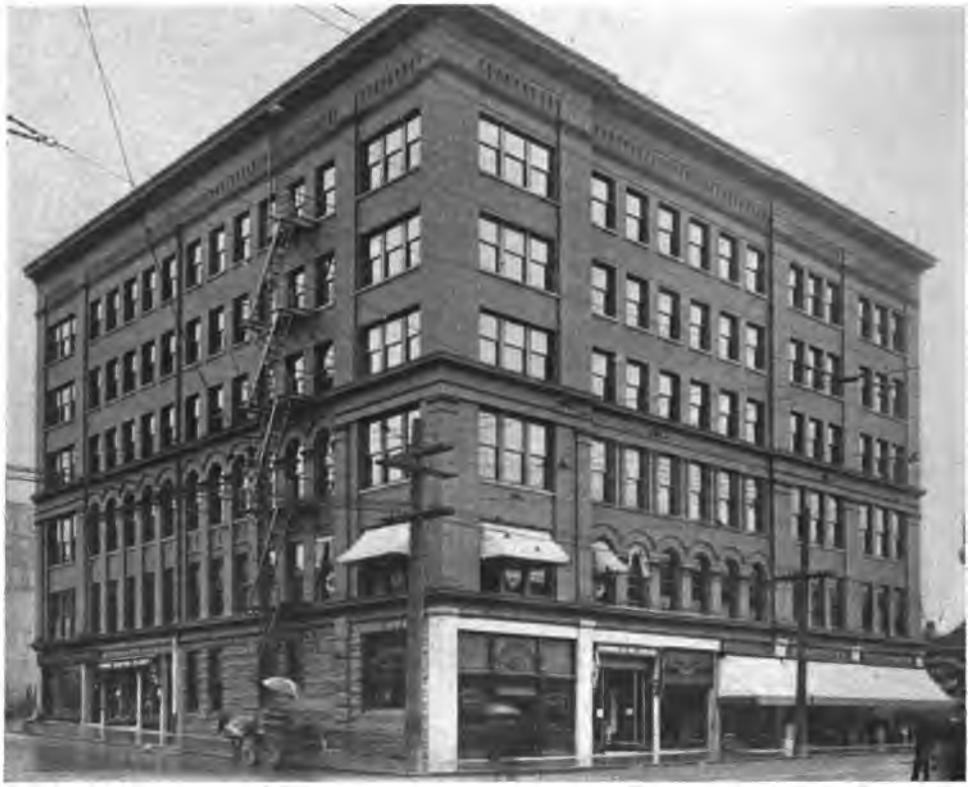
Protected with "R. I. W." Damp-Resisting Paint



KALAMAZOO NATIONAL BANK BUILDING, KALAMAZOO, MICH.

Joseph C. Llewellyn, Architect

Protected with "R. I. W." Damp-Resisting Paint



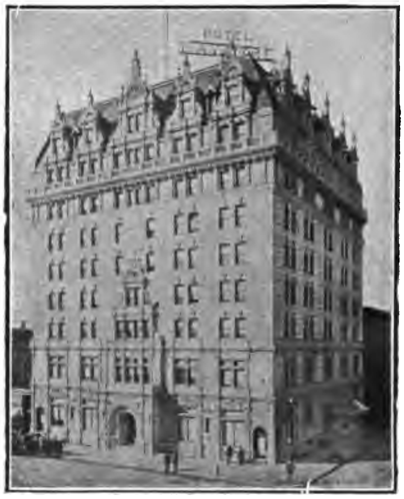
PEOPLE'S BANK BUILDING, SEATTLE, WASH.

Bebb & Mendel, Architects
McClellan Co., Contractors

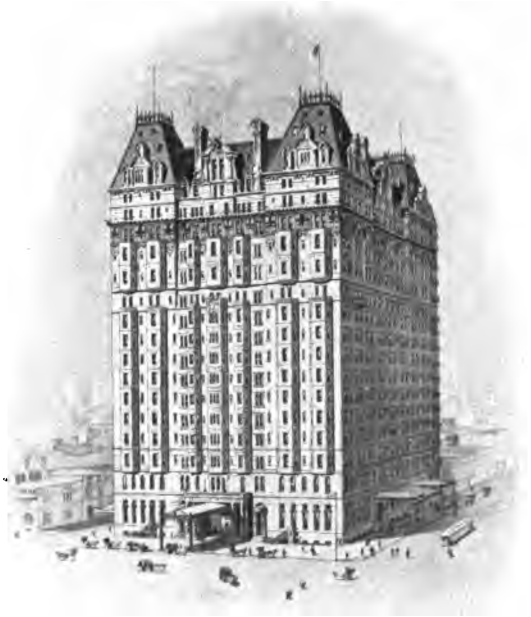
Damp-proofed with "R. I. W." Damp-Resisting Paint

HOTEL NAVARRE,
NEW YORK

Barney & Chapman, Architects
Thompson-Starrett Co., Contractors
Damp-proofed with "R. I. W." Damp-Resisting Paint

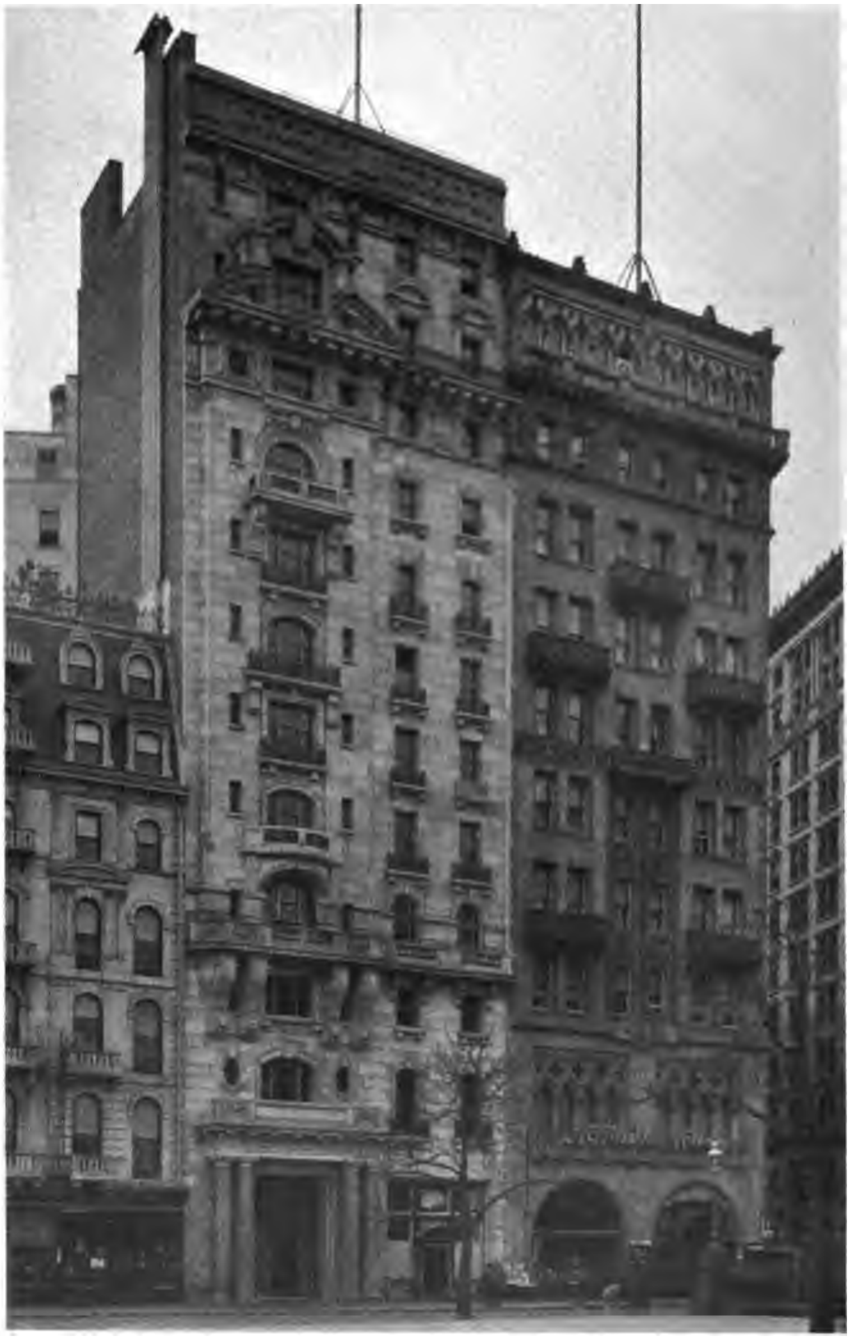


HOTELS AND APARTMENT HOUSES



BELLEVUE-STRATFORD
HOTEL,
PHILADELPHIA

G. W. & W. D. Hewitt, Architects
(Hewitt, Stevens & Paist)
G. A. Fuller Co., Builders



THE NEW HOFFMAN HOUSE, NEW YORK CITY

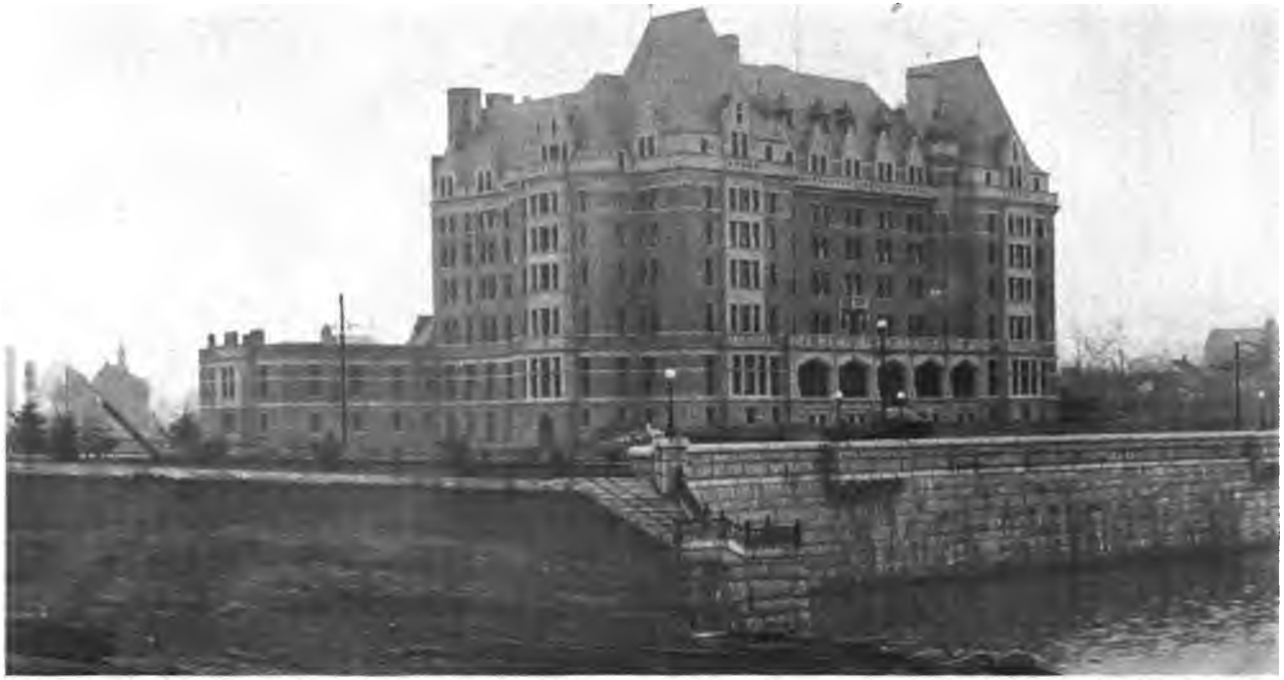
R. L. Daus, Architect
Thompson-Starrett Co., Contractors

Protected with "R. I. W." Damp-Resisting Paint

THE PLAZA, NEW YORK CITY

H. J. Hardenbergh, Architect
Geo. A. Fuller Co., Contractors

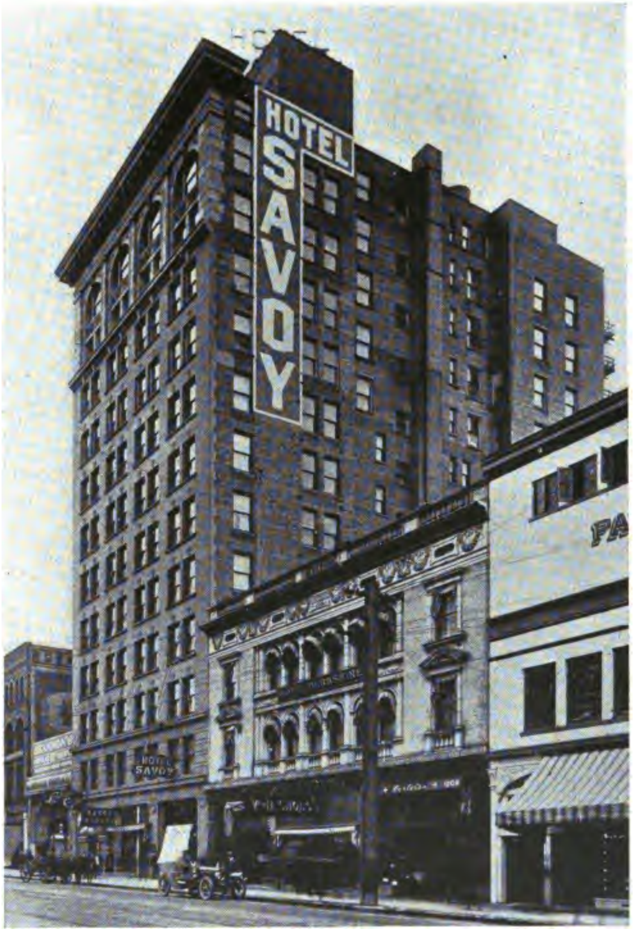
"R. I. W." Damp-Resisting Paint used



THE EMPRESS HOTEL, VICTORIA, B. C., CANADA

F. M. Rattenbury, Architect
Gribble & Skeene, Contractors

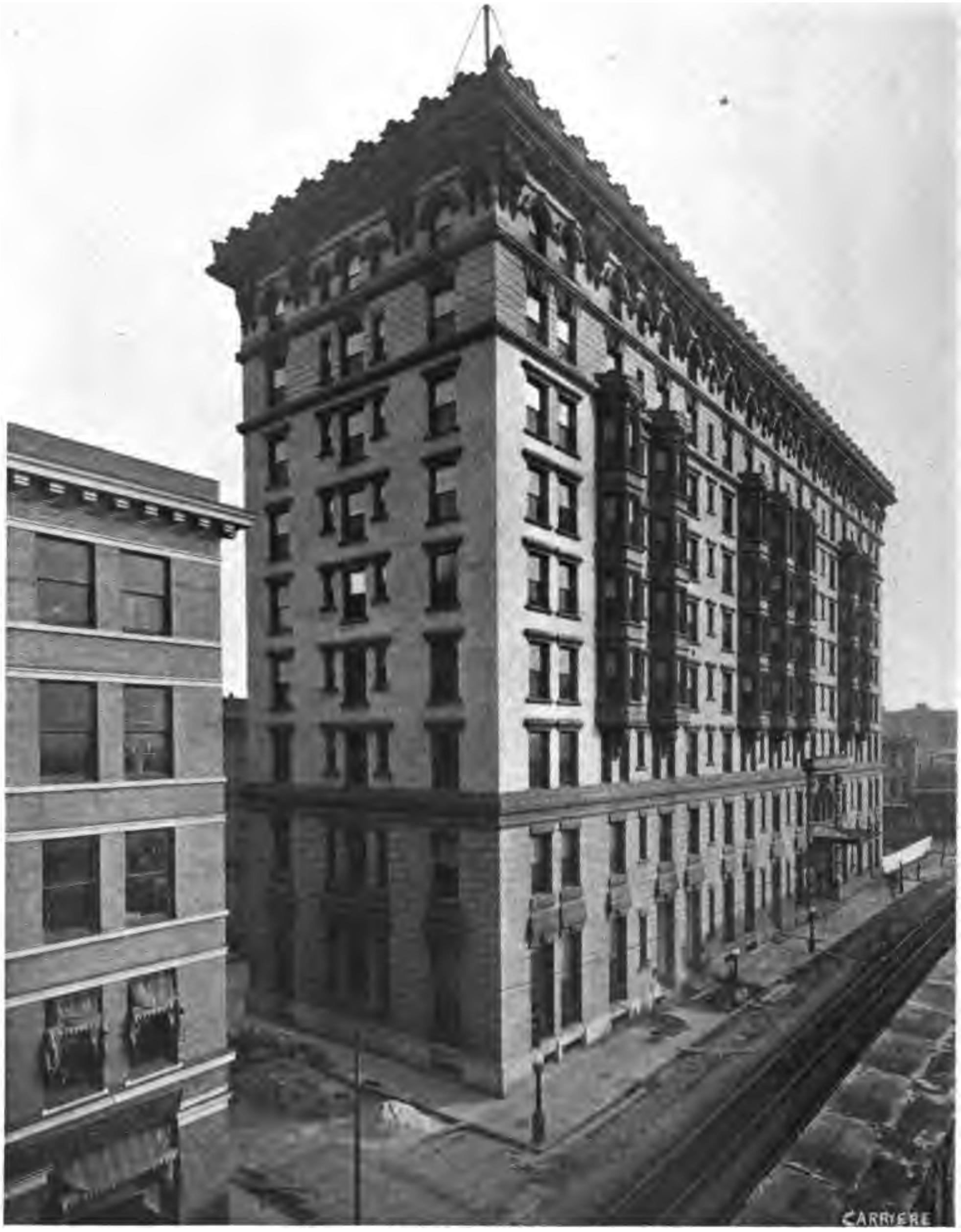
Protected with "R. I. W." Damp-Resisting Paint



HOTEL SAVOY, SEATTLE, WASH.

James H. Schack, Architect

Lokse, Cawsey & Henry, Contractors
Damp-proofed with "R. I. W." Damp-Resisting Paint



HOTEL DENECHAUD, NEW ORLEANS, LA.

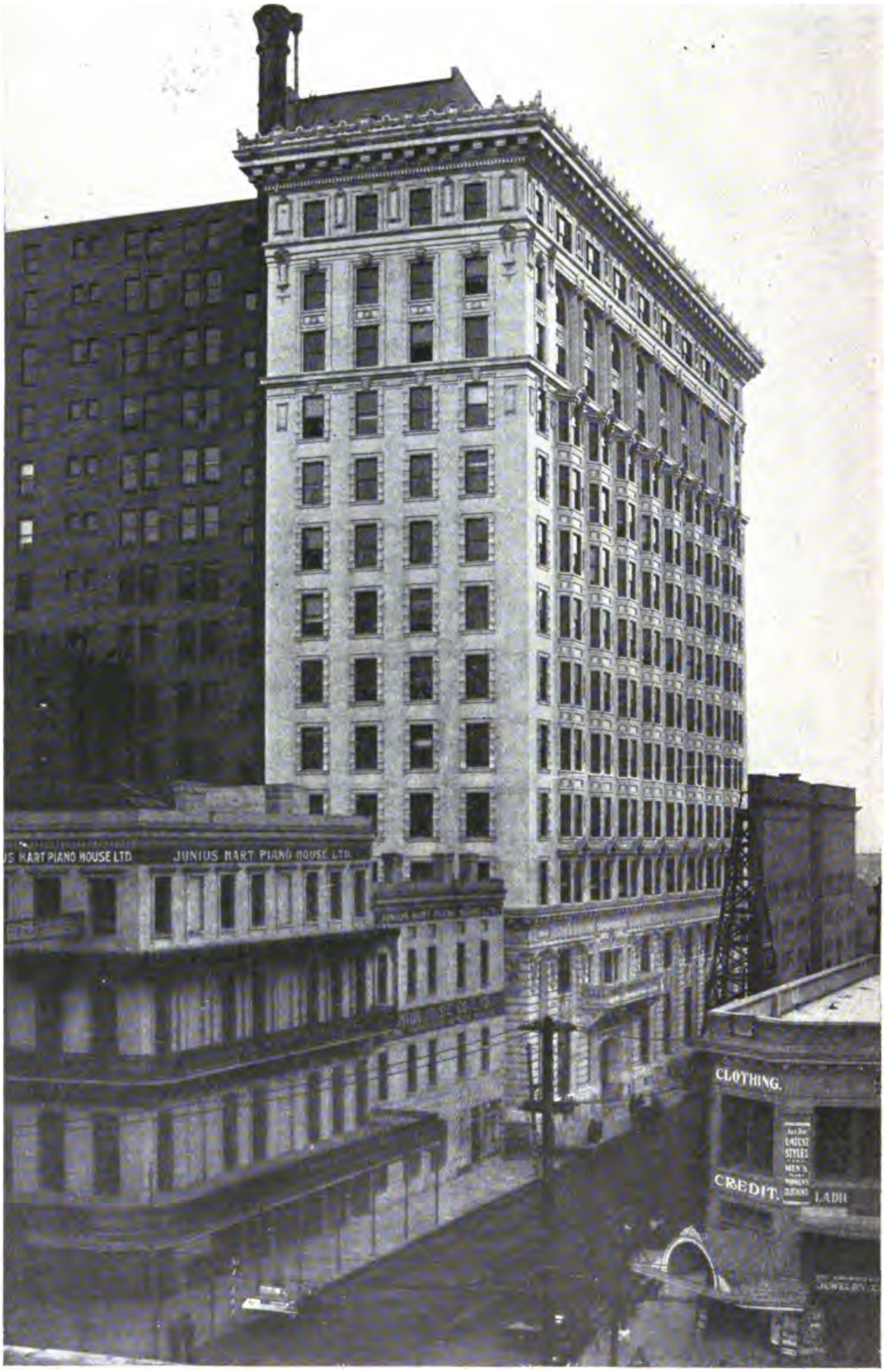
Toledano & Wogan, Architects
Milliken Brothers, Contractors

Damp-proofed with "R. I. W." Damp-Resisting Paint

VINCENNES HOTEL, CHICAGO

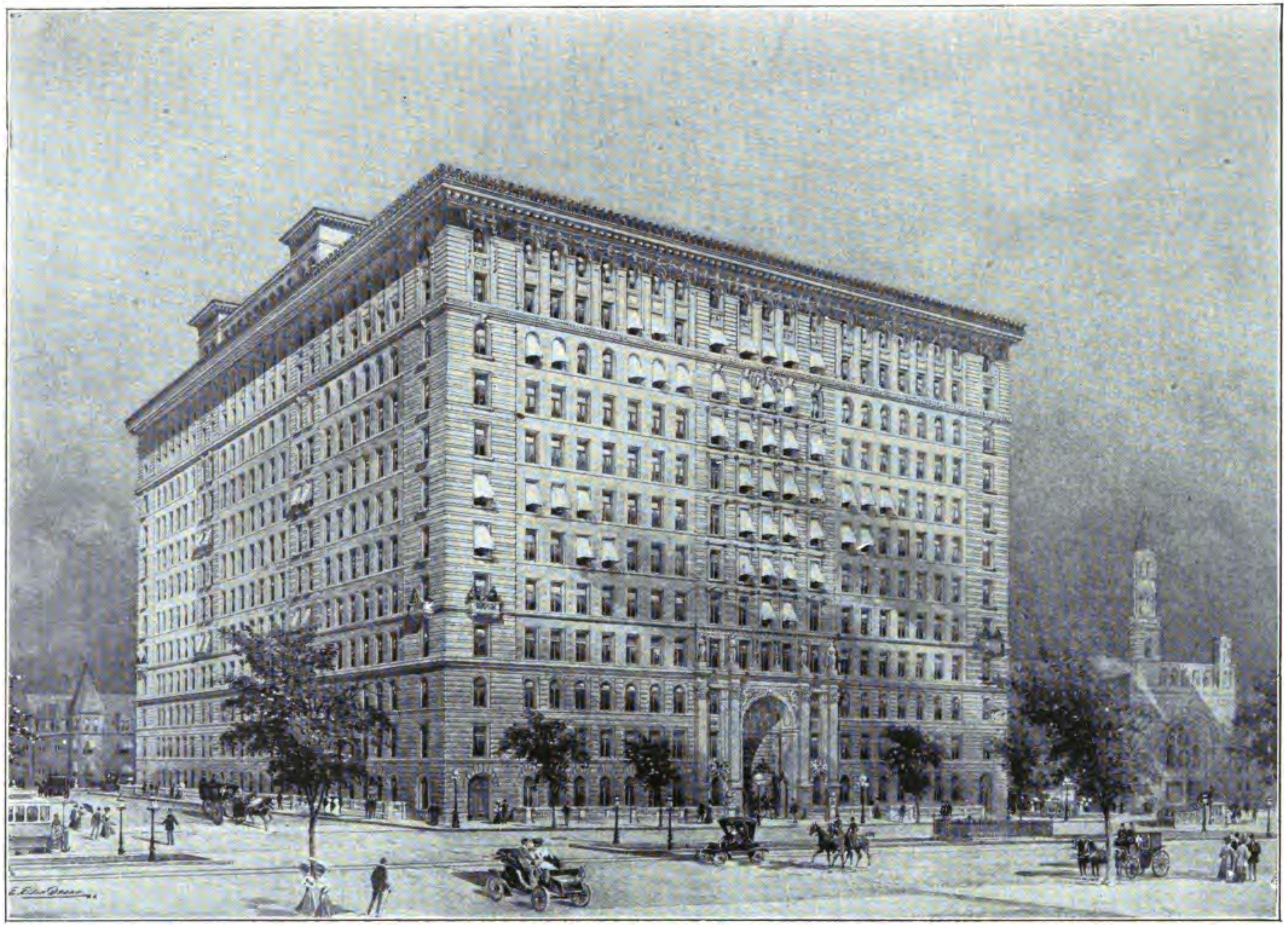
A. W. Buckley, Architect

Damp-proofed with "R. I. W." Damp-Resisting Paint



HOTEL GRUNEWALD, NEW ORLEANS, LA.

Toledano & Wogan, Architects The Grunewald Hotel Co., Contractors
Damp-proofed with "R. I. W." Damp-Resisting Paint
Carriere, Photo.

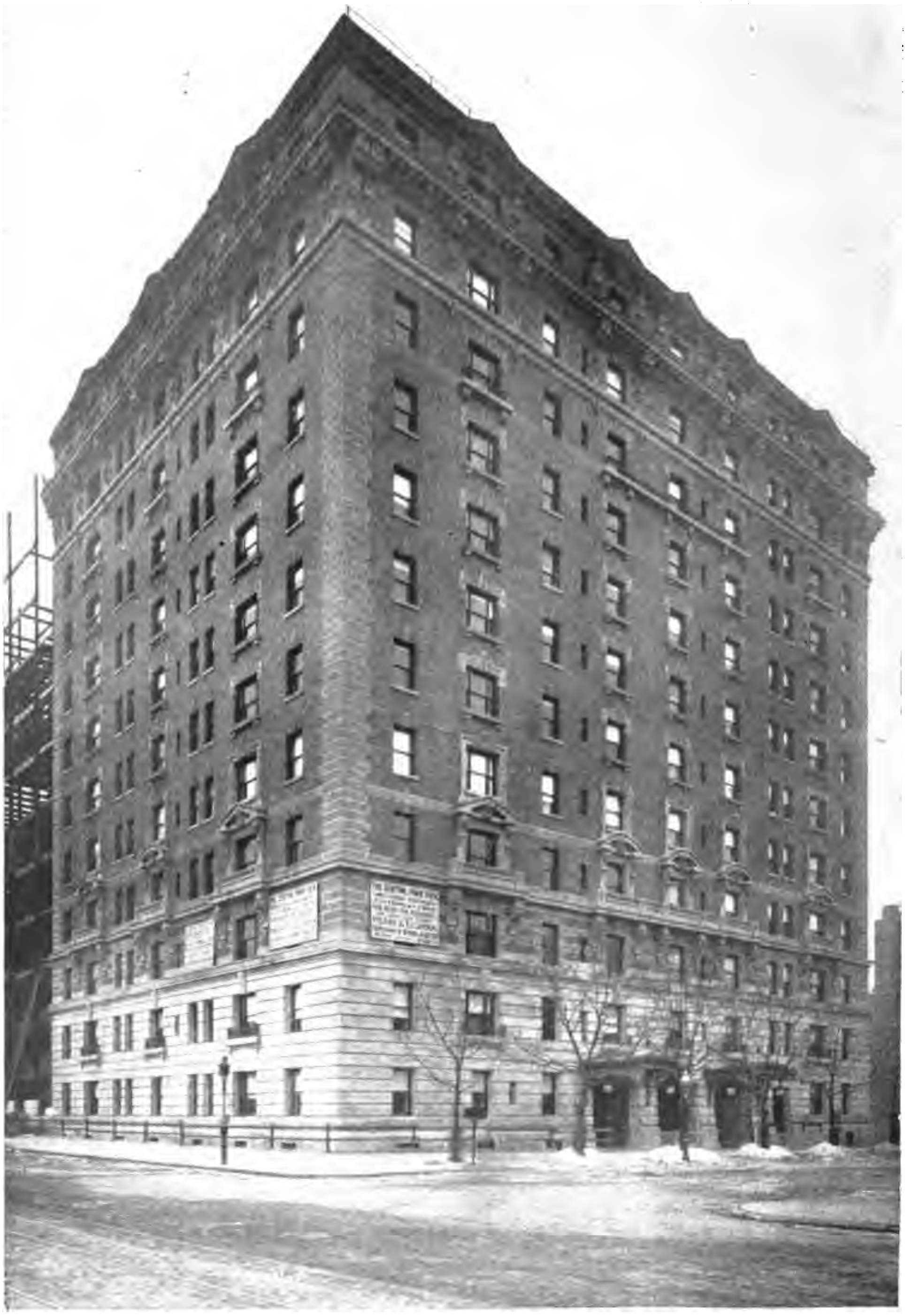


APTHORPE APARTMENTS, NEW YORK

Clinton & Russell, Architects

John Downey, Contractor

Damp-proofed with "R.I.W." Damp-Resisting Paint



THE CENTRAL PARK VIEW, NEW YORK

Mulliken & Moeller, Architects
Gotham Realty Co., Builders
Damp-proofed with "R. I. W." Damp-Resisting Paint

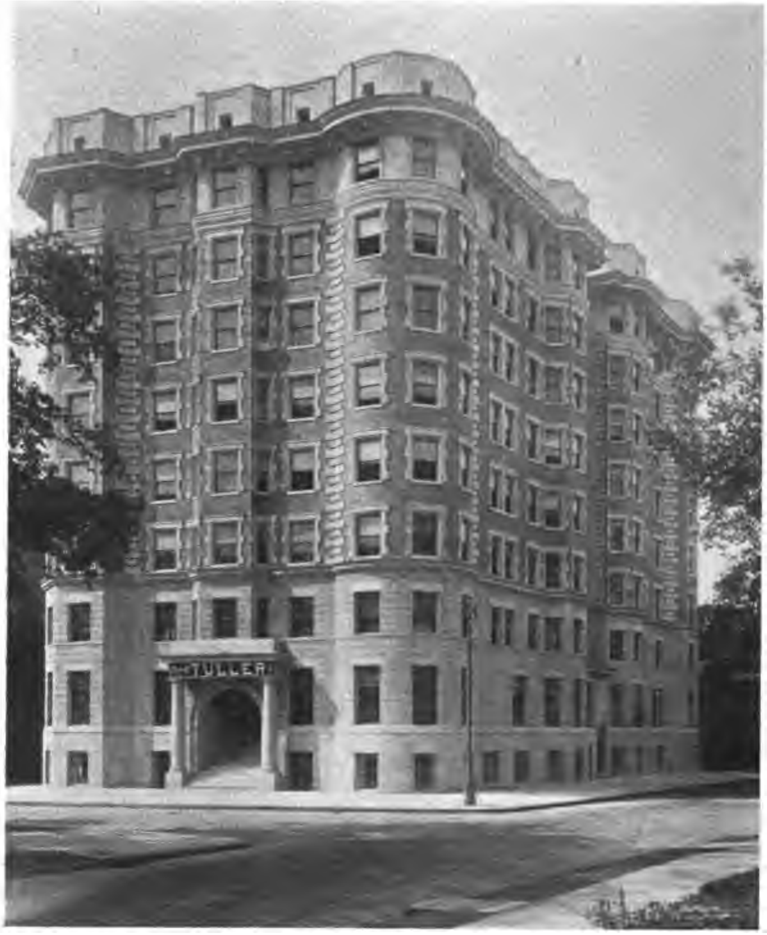
THE GRENVILLE APARTMENTS, VANCOUVER, B. C., CANADA

Damp-proofed with "R. I. W." Damp-Resisting Paint

THE ANSONIA,
NEW YORK CITY

W. E. D. Stokes, Architect

Damp-proofed with "R. I. W."
Damp-Resisting Paint

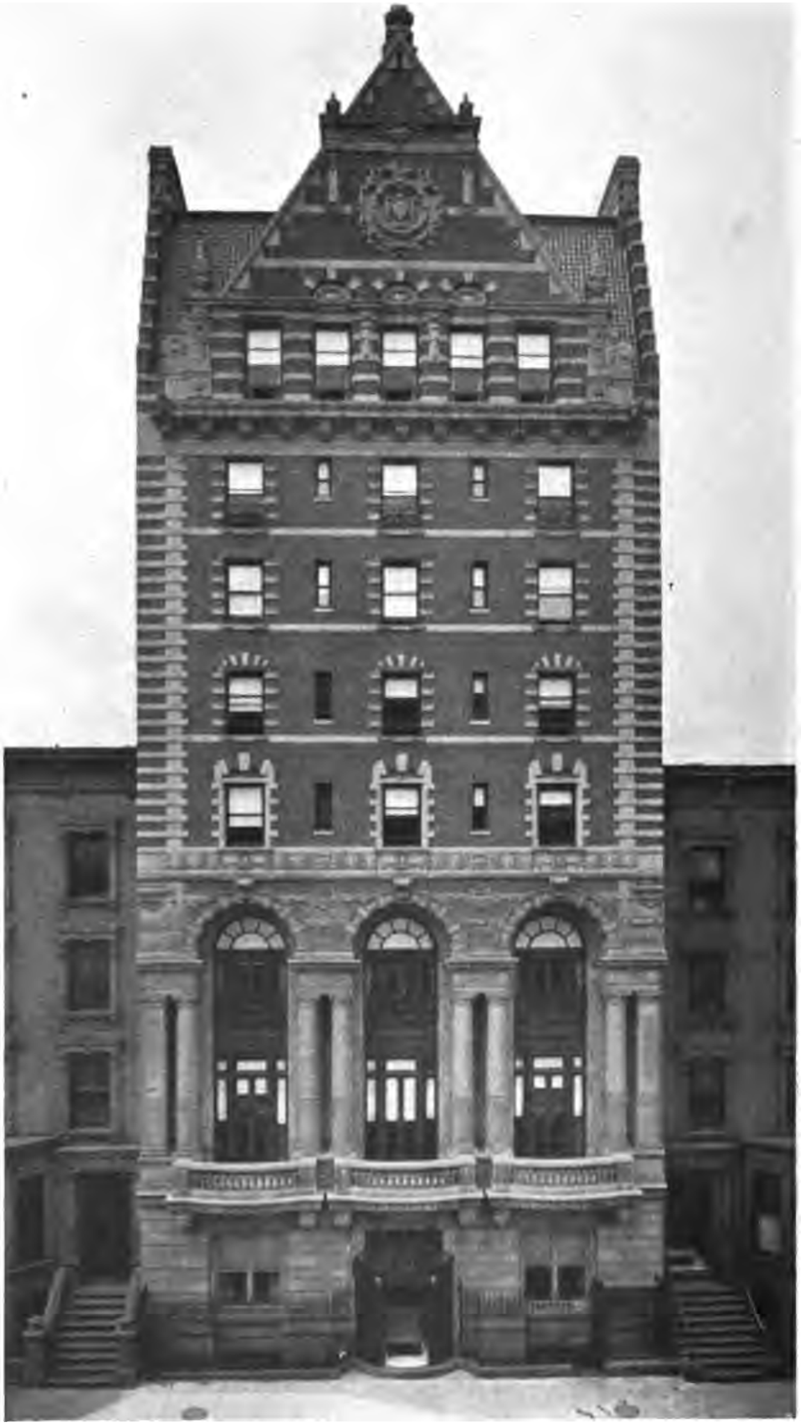


HOTEL TULLER, DETROIT, MICH.

L. W. Tuller, Architect
L. W. Tuller, Contractor

Protected with "R. I. W." Damp-Resisting Paint

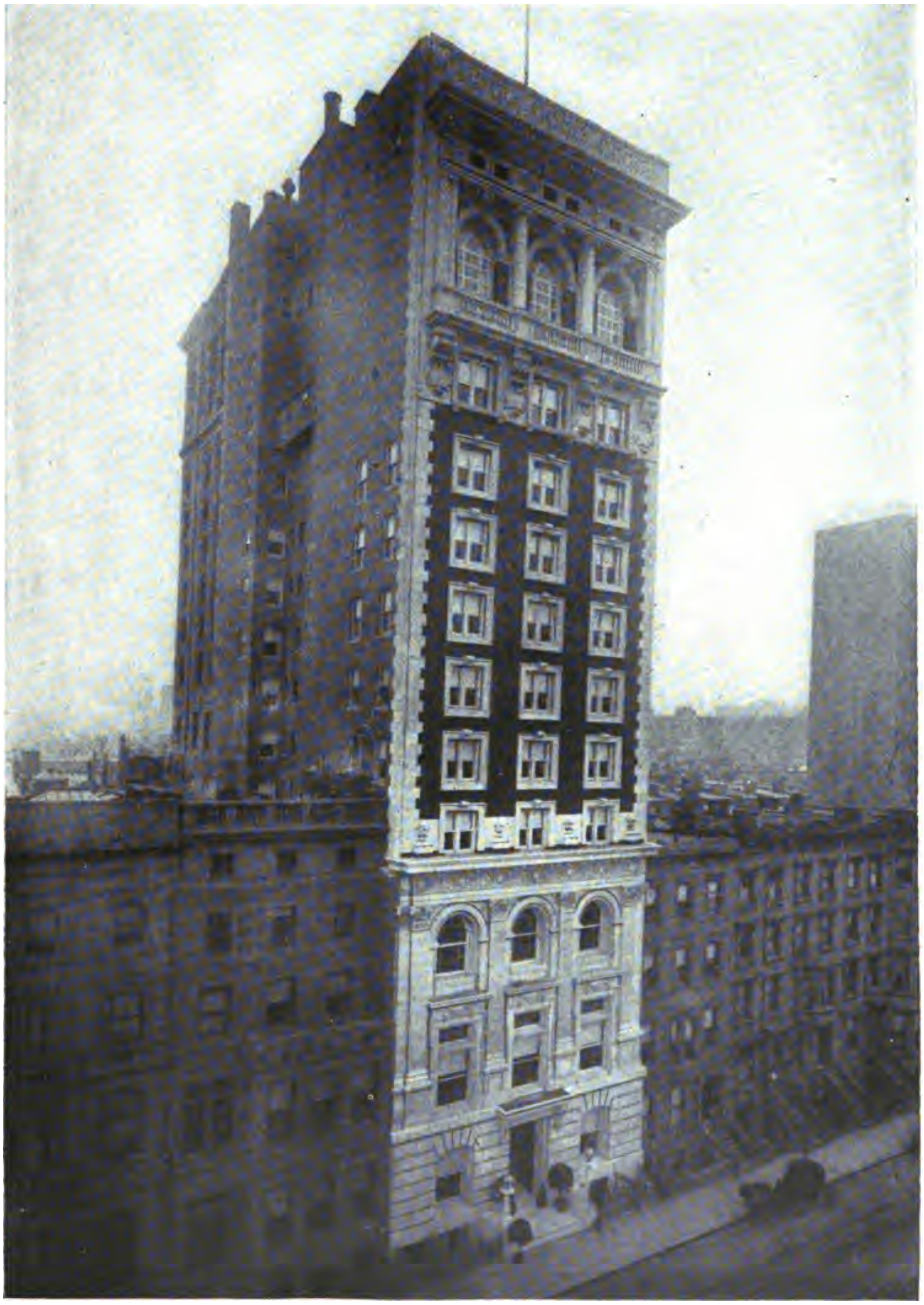
REPRESENTATIVE CLUBS PROTECTED WITH "R. I. W." DAMP-RESISTING PAINT



THE NEW YORK CLUB, NEW YORK CITY

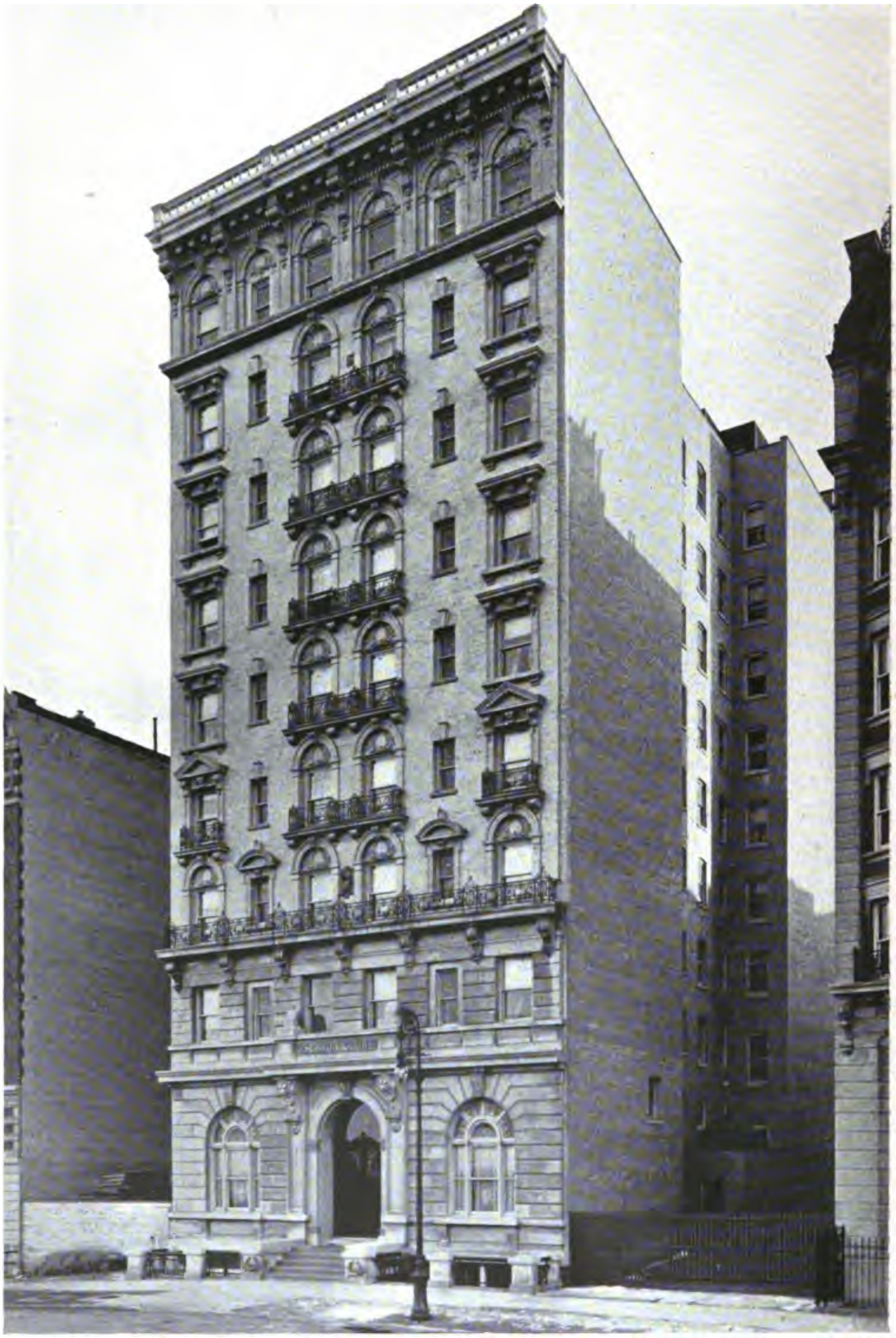
H. J. Hardenbergh, Architect
Wells Bros., Contractors

Protected with "R. I. W." Damp-Resisting Paint



THE ENGINEERS' CLUB, NEW YORK CITY

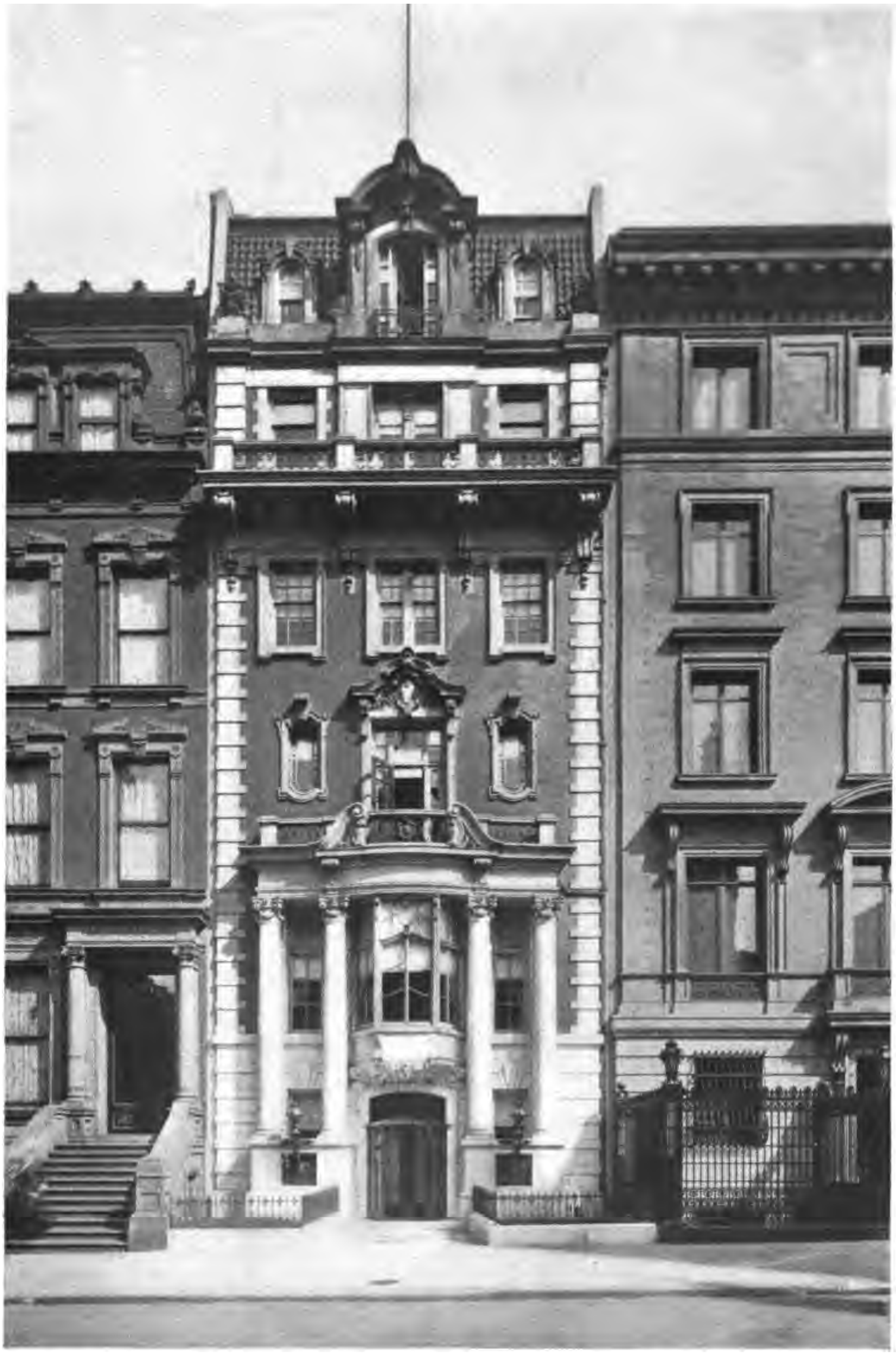
Whitfield & King, Architects
W. L. Crow, Contractor
Protected with " Liquid Konkerit "



THE SESRUN CLUB, NEW YORK CITY

Neville & Bagge, Architects

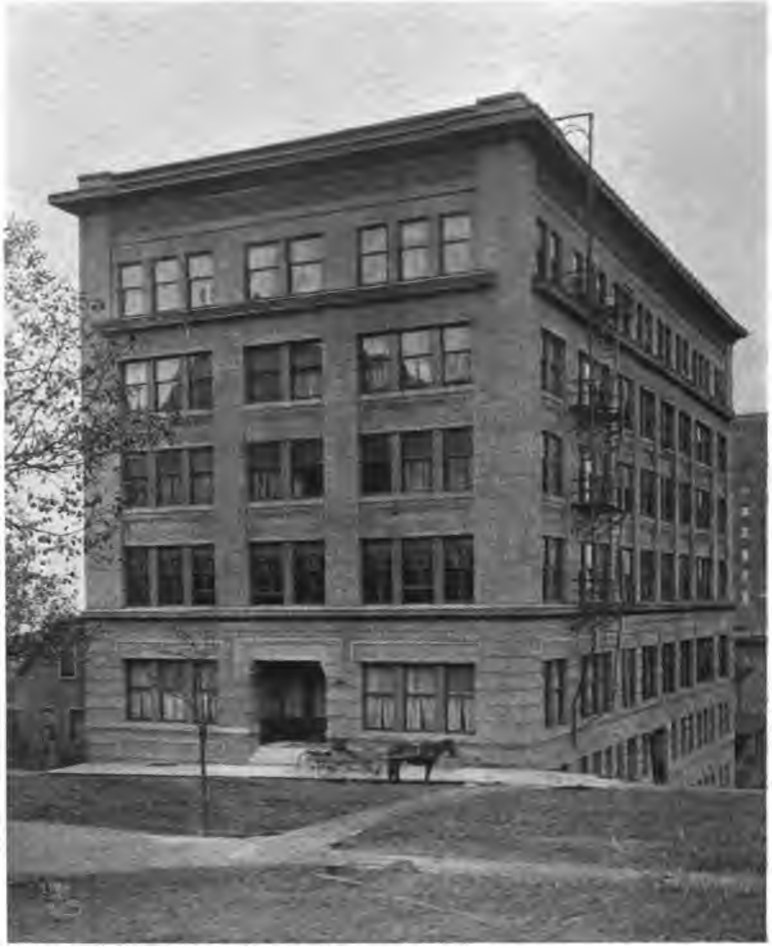
Protected with "R. I. W." Damp-Resisting Paint



THE CRITERION CLUB, NEW YORK CITY

Oscar Lowinson, Architect

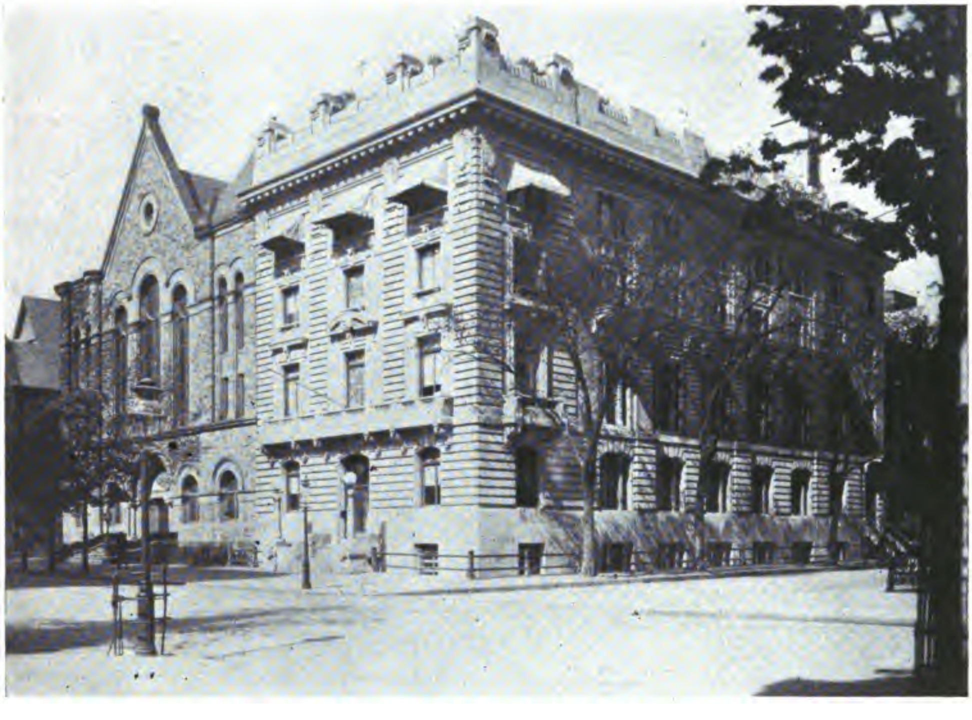
Protected with "R. I. W." Damp-Resisting Paint



THE SEATTLE ATHLETIC CLUB, SEATTLE, WASH.

Bebb & Mendel, Architects
Shannon, White & Middleton, Contractors

Damp-proofed with "R. I. W." Damp-Resisting Paint
Light Court protected with "Liquid Konkerit" and "Anhydrosol"

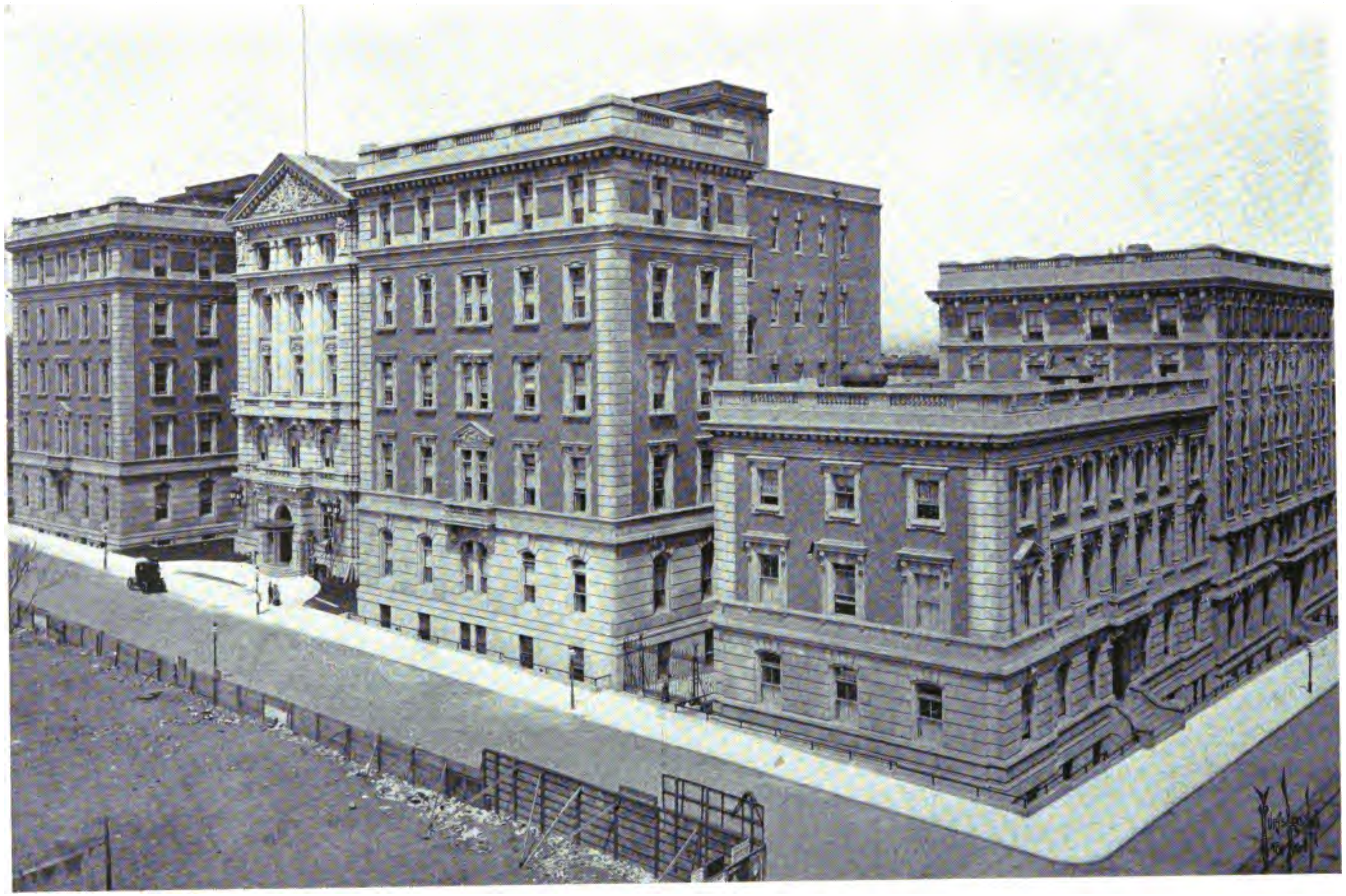


THE COLUMBIA CLUB, NEW YORK CITY

Oscar Lowinson, Architect

Protected with "R. I. W." Damp-Resisting Paint

REPRESENTATIVE PUBLIC HOMES, HOSPITALS AND DORMITORIES PROTECTED WITH "R. I. W." DAMP-RESISTING PAINT

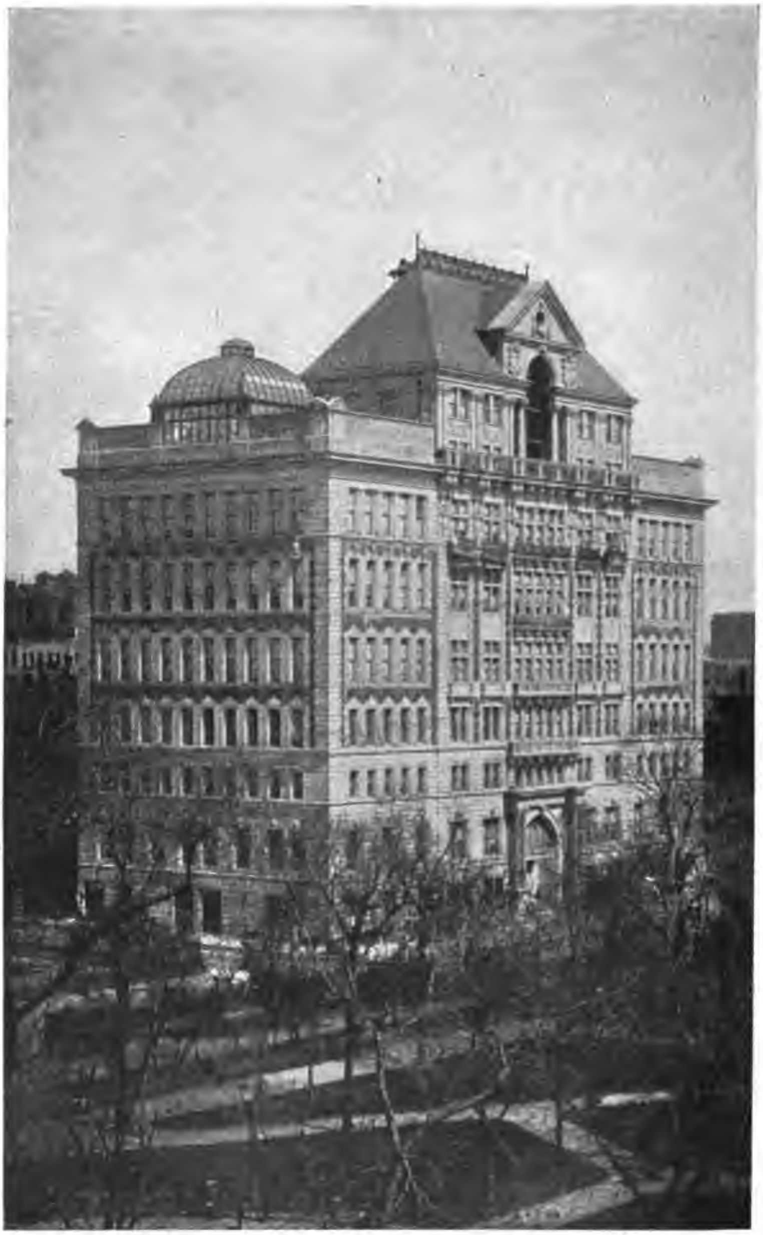


MOUNT SINAI HOSPITAL, NEW YORK

Arnold W. Brunner, Architect

The Norcross Co., Contractors

Protected with "R.I.W." Damp-Resisting Paint



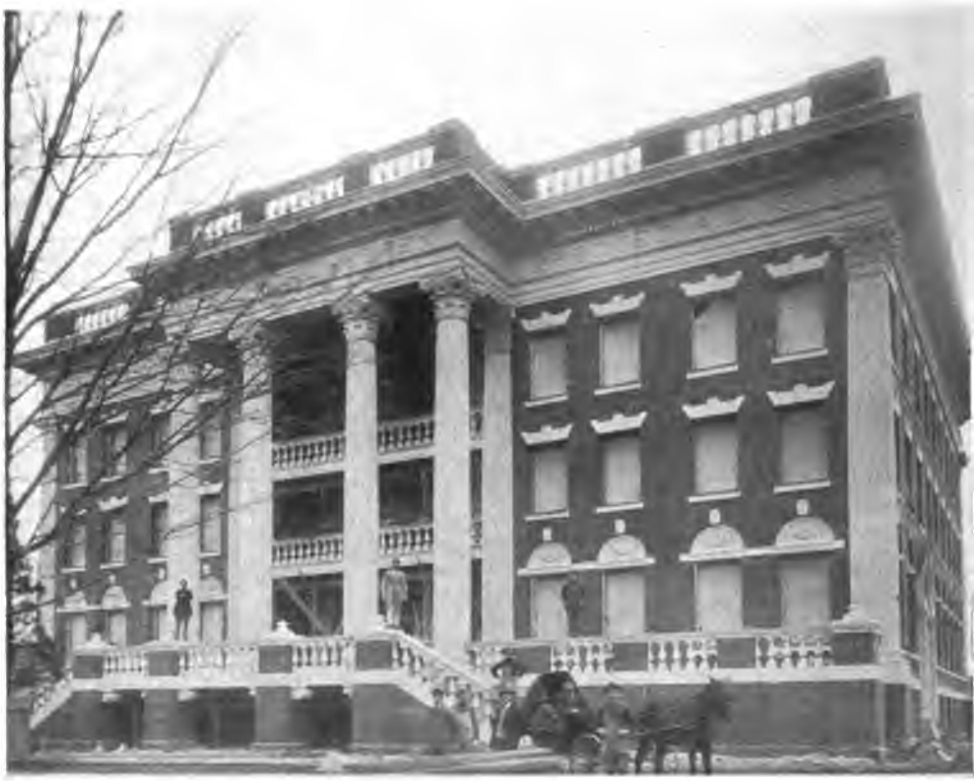
THE LYING-IN HOSPITAL, NEW YORK CITY

Robertson & Potter, Architects
Norcross Brothers, Contractors

Limestone coated with "R. I. W." Damp-Resisting Paint
Protected with "R. I. W." Damp-Resisting Paint
Floors of Operating Room Protected with "Cement Filler" and "Sanitary Cement Floor Paint"

DORMITORIES OF THE UNIVERSITY OF PENNSYLVANIA, PHILADELPHIA

Protected with "R. I. W." Damp-Resisting Paint



CHILDREN'S HOME, GRAND RAPIDS, MICH.

A. W. Buckley, Architect
N. J. Westra, Contractor

Protected with "R. I. W." Damp-Resisting Paint

MICHIGAN SOLDIERS' HOME HOSPITAL, GRAND RAPIDS, MICH.

Osgood & Osgood, Architects
H. L. Van der Horst, Contractor
Damp-proofed with "R. I. W." Damp-Resisting Paint

NURSES' LODGE, UNITED BRETHREN HOSPITAL, GRAND RAPIDS, MICH.

Robinson & Compan, Architects
Gentz Bros., Contractors
Damp-proofed with "R. I. W." Damp-Resisting Paint

THE MACY BUILDING, NEW YORK

De Lemos & Cordes, Architects
G. A. Fuller Co., Contractors

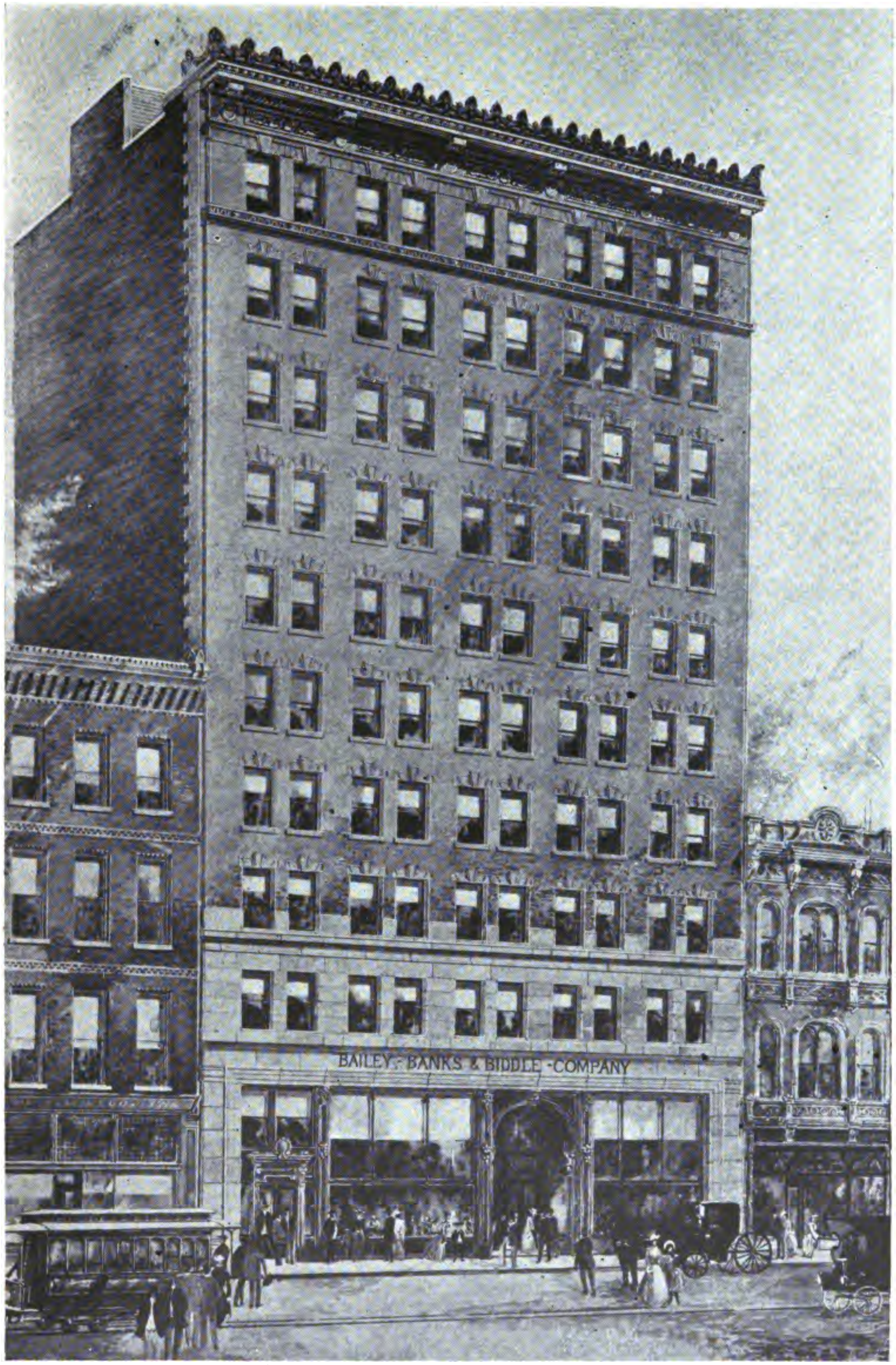
Damp-proofed with "R. I. W." Damp-Resisting Paint

BUSINESS BUILDINGS OF VARIOUS TYPES DAMP-PROOFED WITH "R. I. W." PAINTS

THE SAKS BUILDING, NEW YORK

Buchman & Fox, Architects
G. A. Fuller Co., Contractors

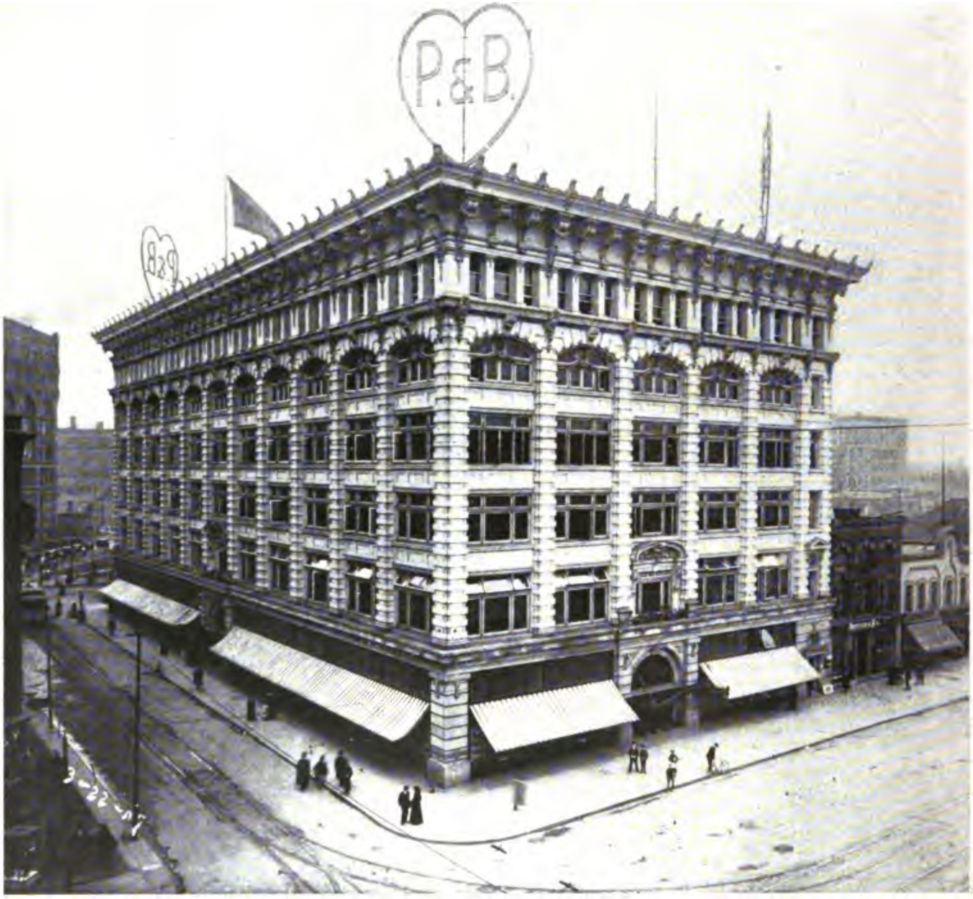
Damp-proofed with "R. I. W." Damp-Resisting Paint



BAILEY, BANKS & BIDDLE BUILDING, PHILADELPHIA

Thompson-Starrett Co., Architects

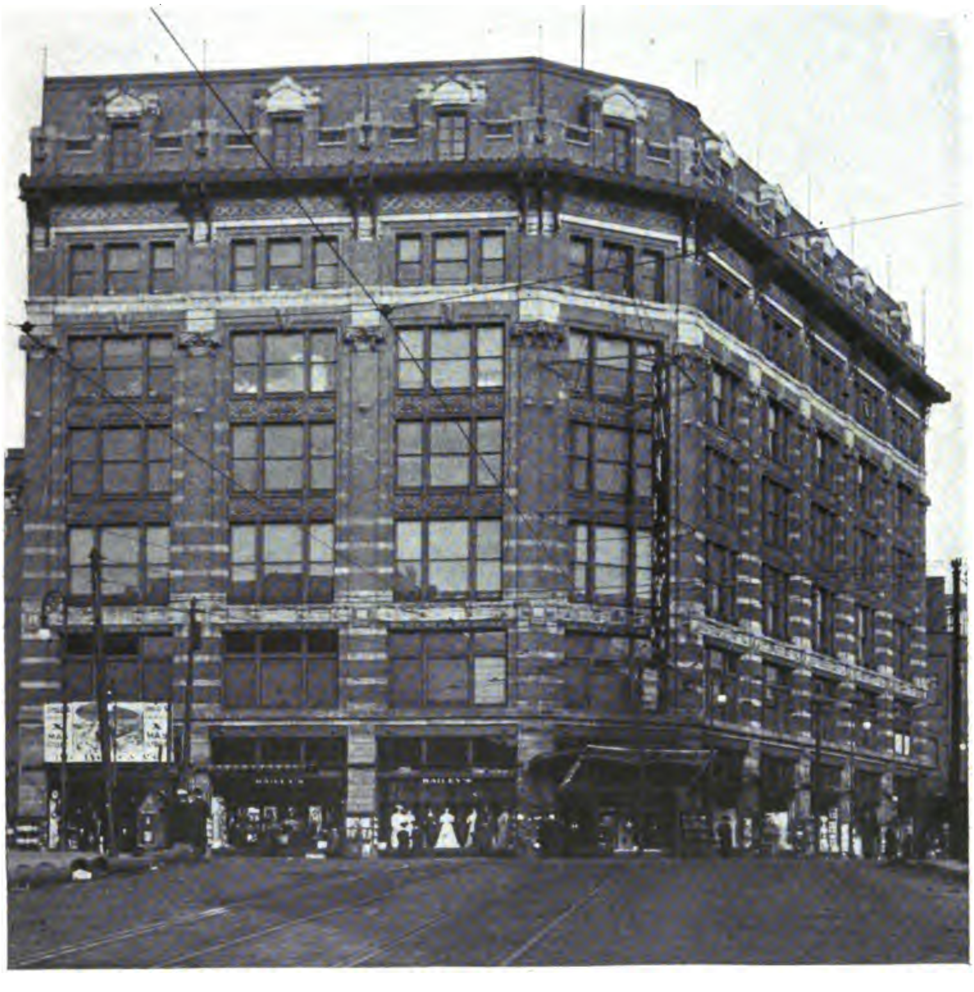
Damp-proofed with "R. I. W." Damp-Resisting Paint



PARTRIDGE & BLACKWELL BUILDING, DETROIT, MICH.

Smith, Hinchman & Grylls, Architects
Alex. Chapoton, Jr., Contractor

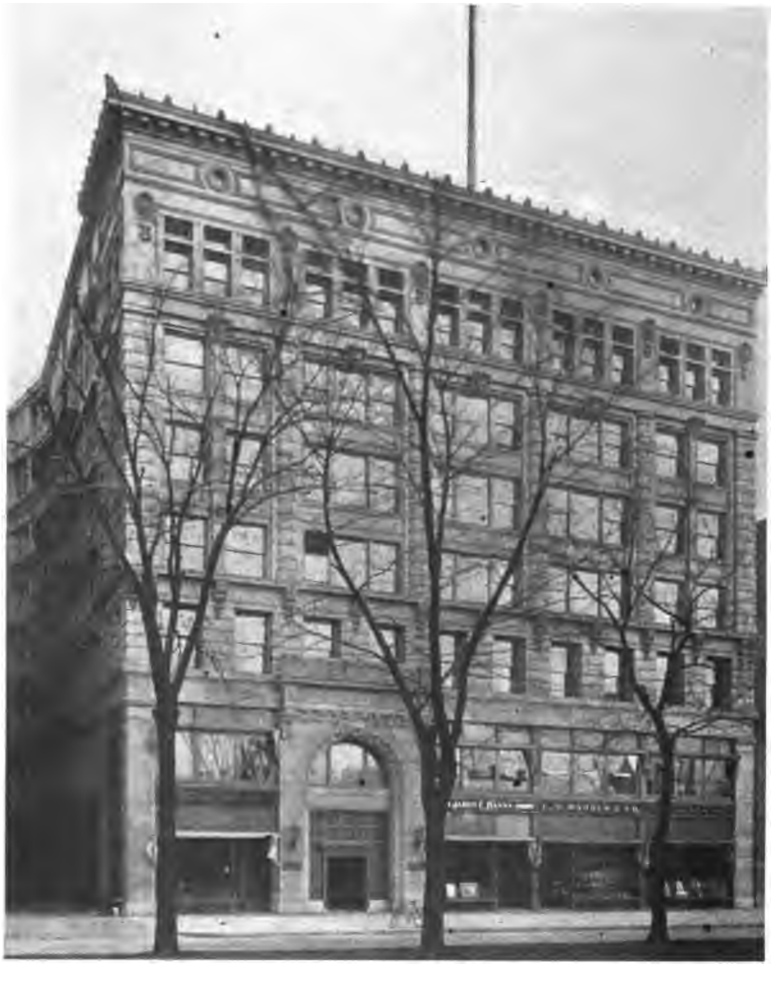
Damp-proofed with "R. I. W." Damp-Resisting Paint



BAILEY BUILDING, CLEVELAND, OHIO

Lehman & Schmitt, Architects
Andrew Dall & Son, Contractors

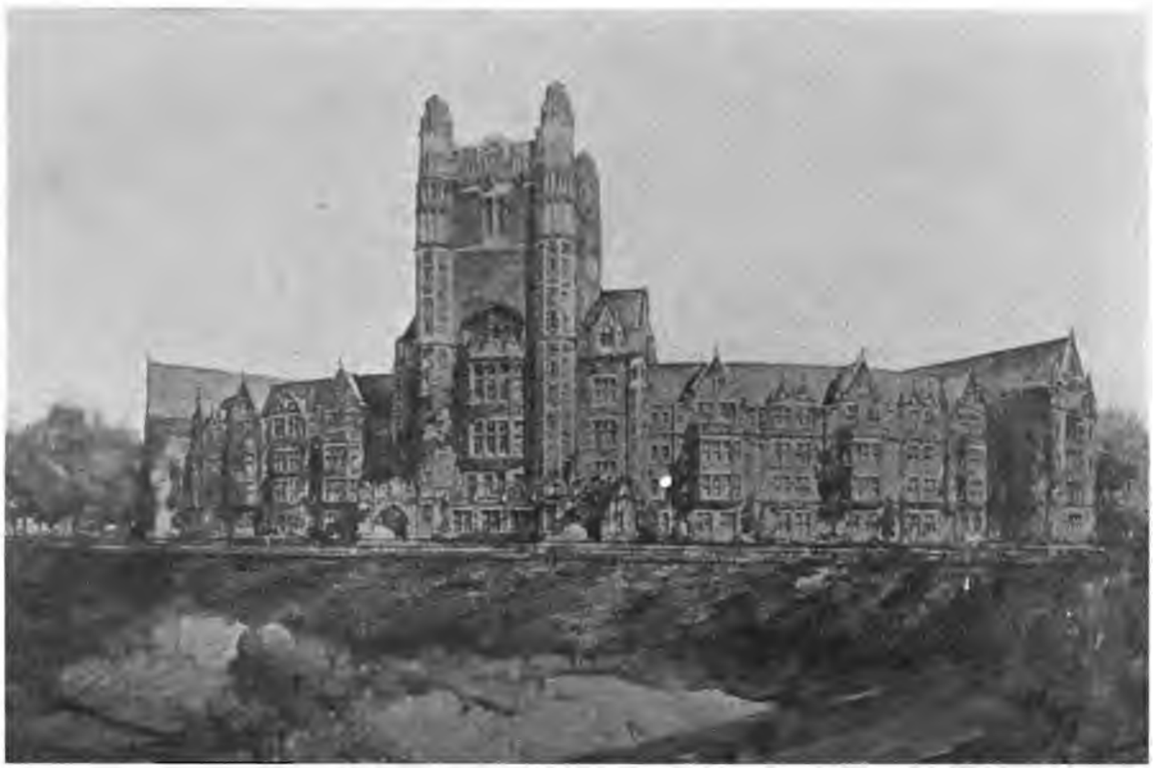
Damp-proofed with "R. I. W." Damp-Resisting Paint



THE WASHINGTONIAN, DETROIT

Damp-proofed with "R. I. W." Damp-Resisting Paint

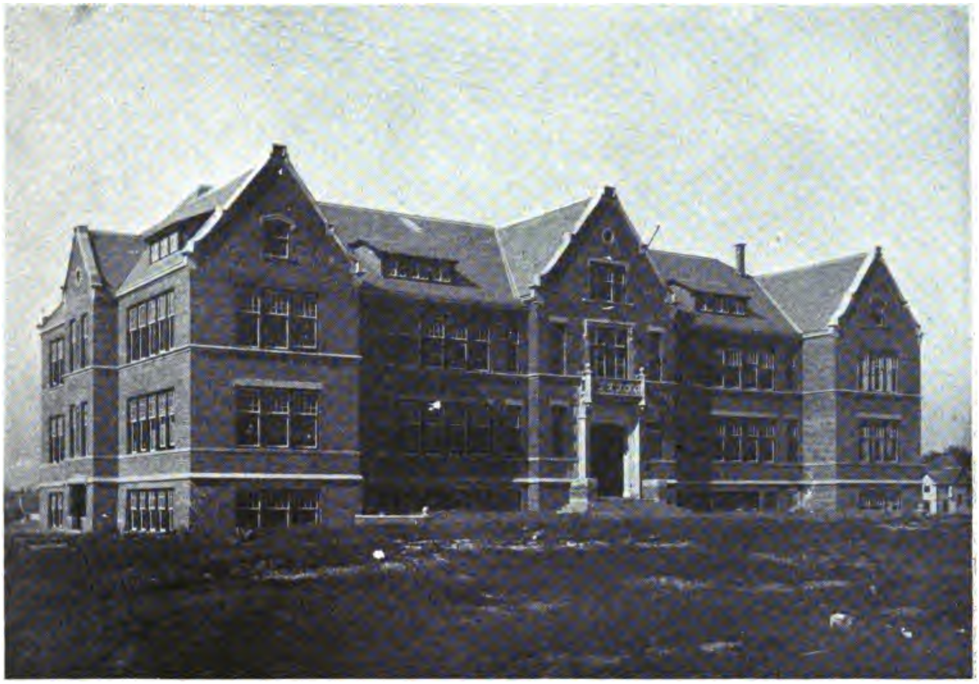
SCHOOLS AND COLLEGE BUILDINGS PROTECTED WITH "R. I. W." PAINT



THE COLLEGE OF THE CITY OF NEW YORK, NEW YORK CITY

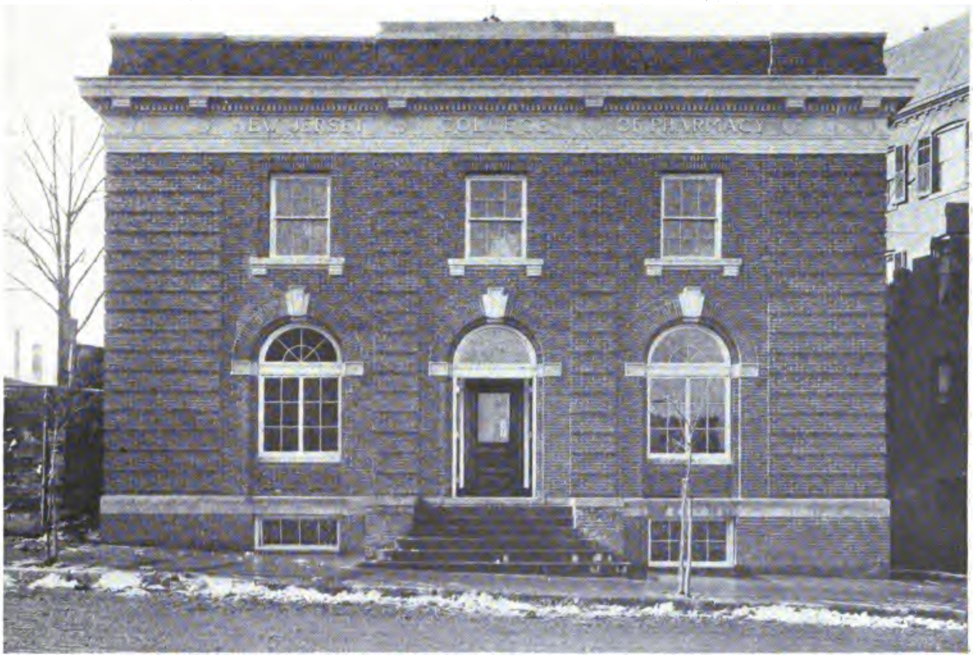
Geo. B. Post & Son, Architects

Protected with "R. I. W." Damp-Resisting Paint



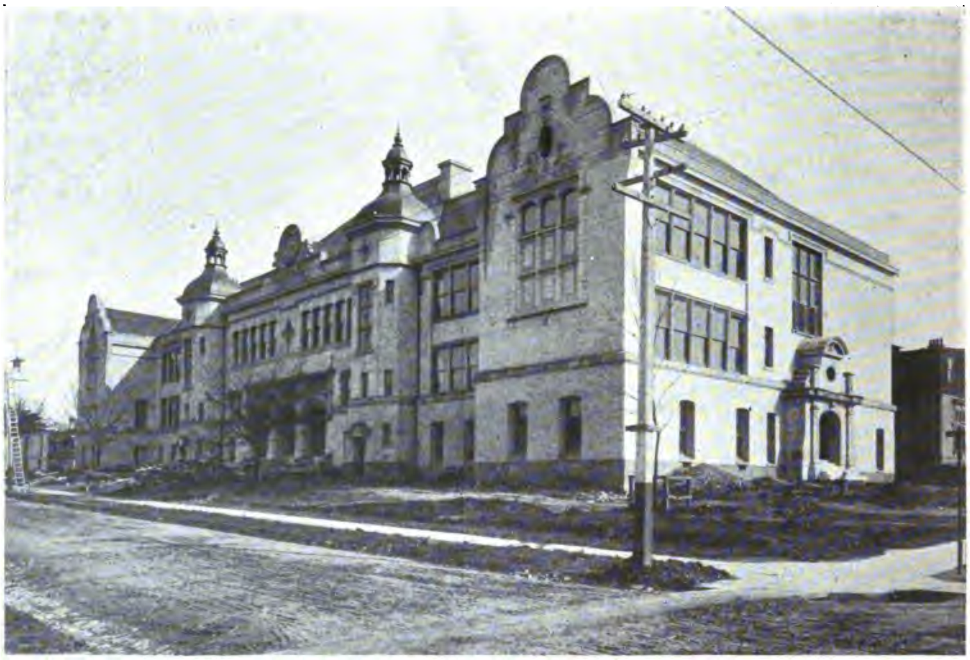
THE SIGSBEE SCHOOL, GRAND RAPIDS, MICH.

Robinson & Compan, Architects
H. G. Christman & Co., Contractors
Protected with "R. I. W." Damp-Resisting Paint



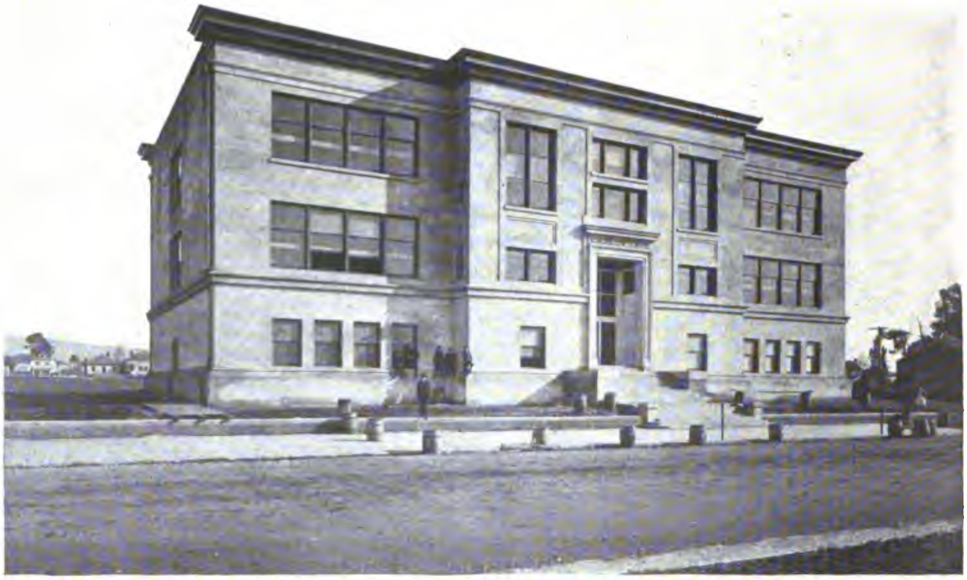
THE NEW JERSEY COLLEGE OF PHARMACY, NEWARK, N. J.

J. C. & W. H. Ely, Architects
Lewis Parker Construction Co., Contractors
Protected with "R. I. W." Damp-Resisting Paint



THE FRANKLIN SCHOOL, OAKLAND, CAL.

Stone & Smith, Architects
P. N. Kuss, Contractor
Protected with "R. I. W." Damp-Resisting Paint



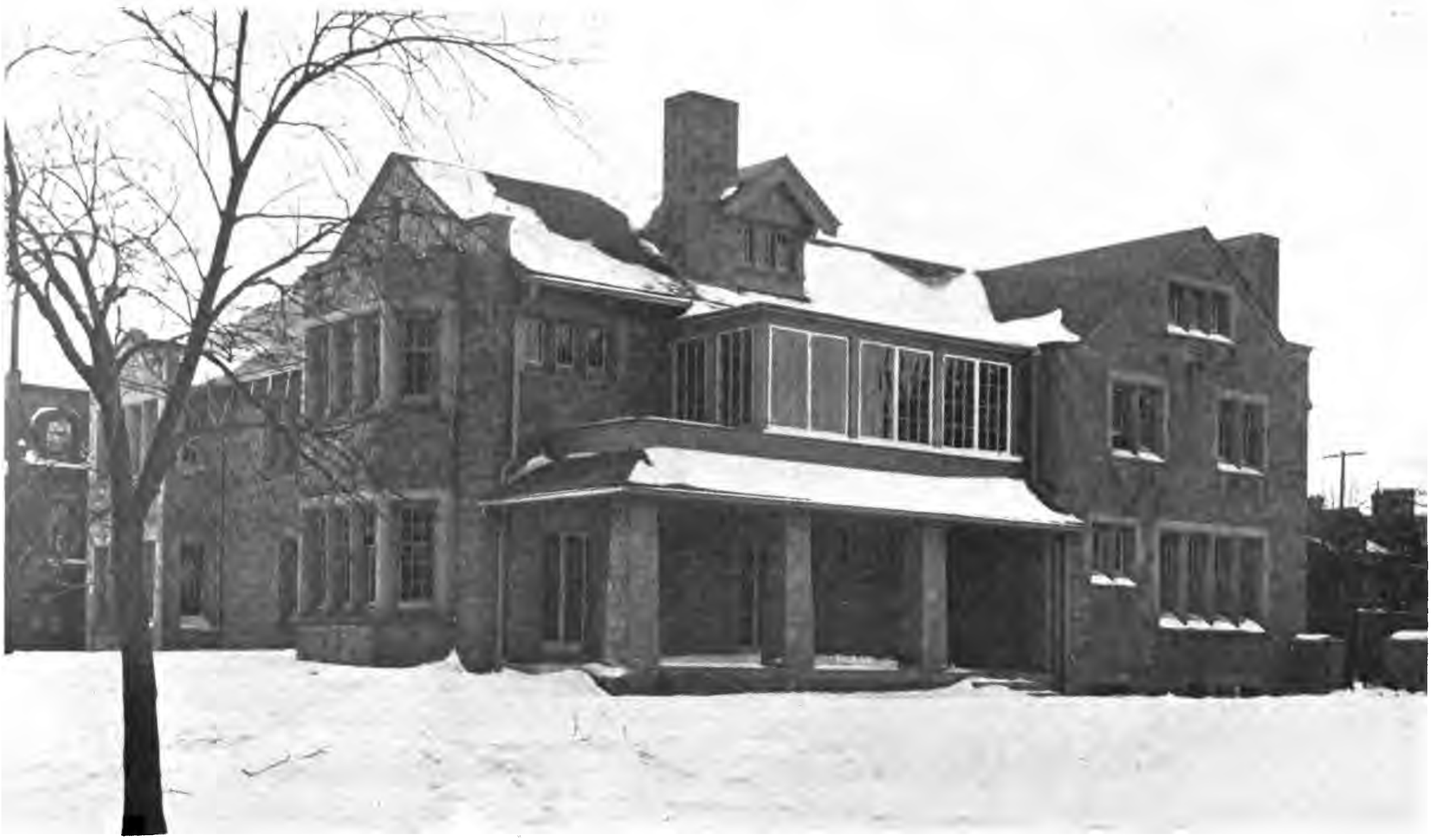
THE LONGFELLOW SCHOOL, OAKLAND, CAL.

C. W. Dickey, Architect
Protected with "R. I. W." Damp-Resisting Paint

A FEW HOMES AND RESIDENCES DAMP-PROOFED WITH "R. I. W." PAINT

THOMAS N. MARTIN RESIDENCE, NEWARK, N. J.

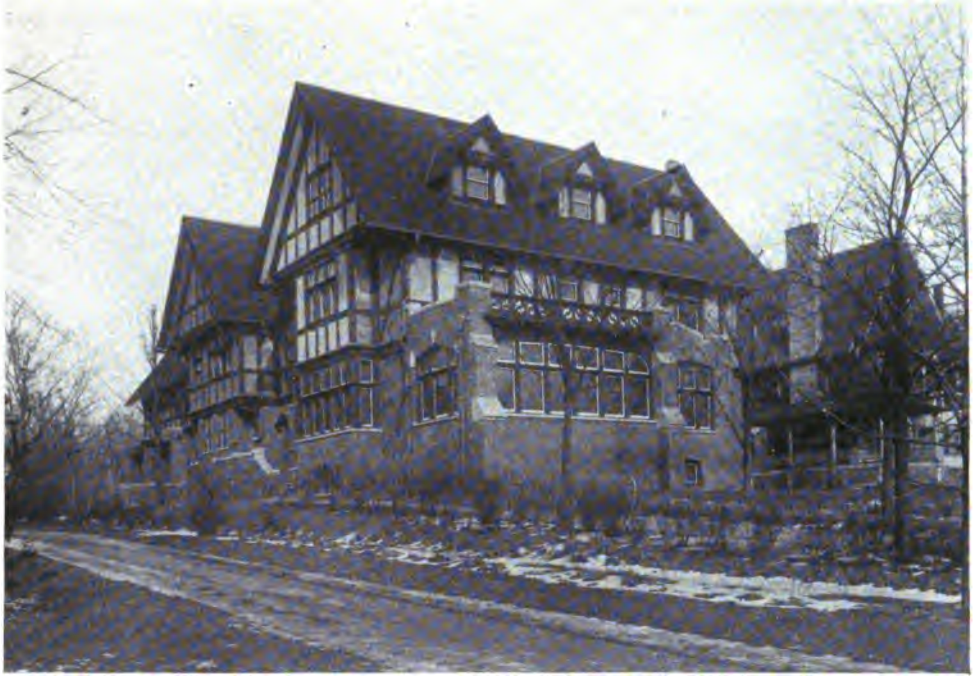
W. G. Lawrence, Architect
V. J. Hedden & Sons Co., Contractors
Protected with "R. I. W." Damp-Resisting Paint



METROPOLITAN METHODIST PARSONAGE, TORONTO, CANADA

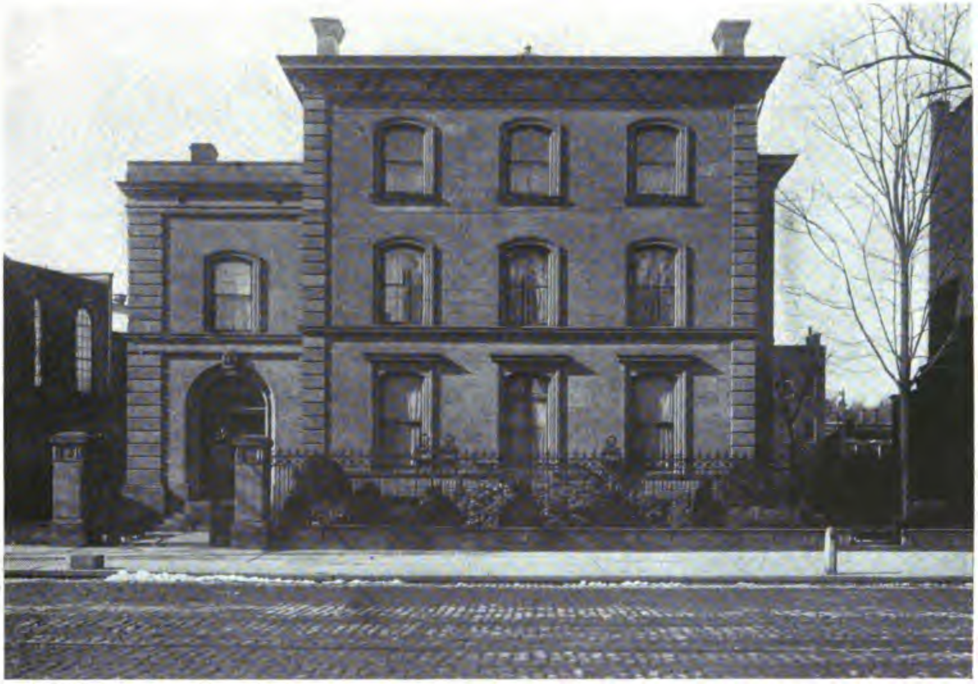
Sproatt & Rolph, Architects
Dancy Brothers, Contractors

Protected with "R. I. W." Damp-Resisting Paint



T. STEWART WHITE RESIDENCE, GRAND RAPIDS, MICH.

Williamson & Crow, Architects
C. J. Brill, Mason Contractor
Protected with "R. I. W." Damp-Resisting Paint



FRANKLIN MURPHY RESIDENCE, NEWARK, N. J.

A. V. B. Magonigle, Architect
Peter Vanderhoof & Sons Co., Contractors
Protected with "R. I. W." Damp-Resisting Paint

E. L. RYERSON RESIDENCE, LAKE FOREST, ILL.

Howard Van Doren Shaw, Architect

Damp-proofed with "R. I. W." Damp-Resisting Paint

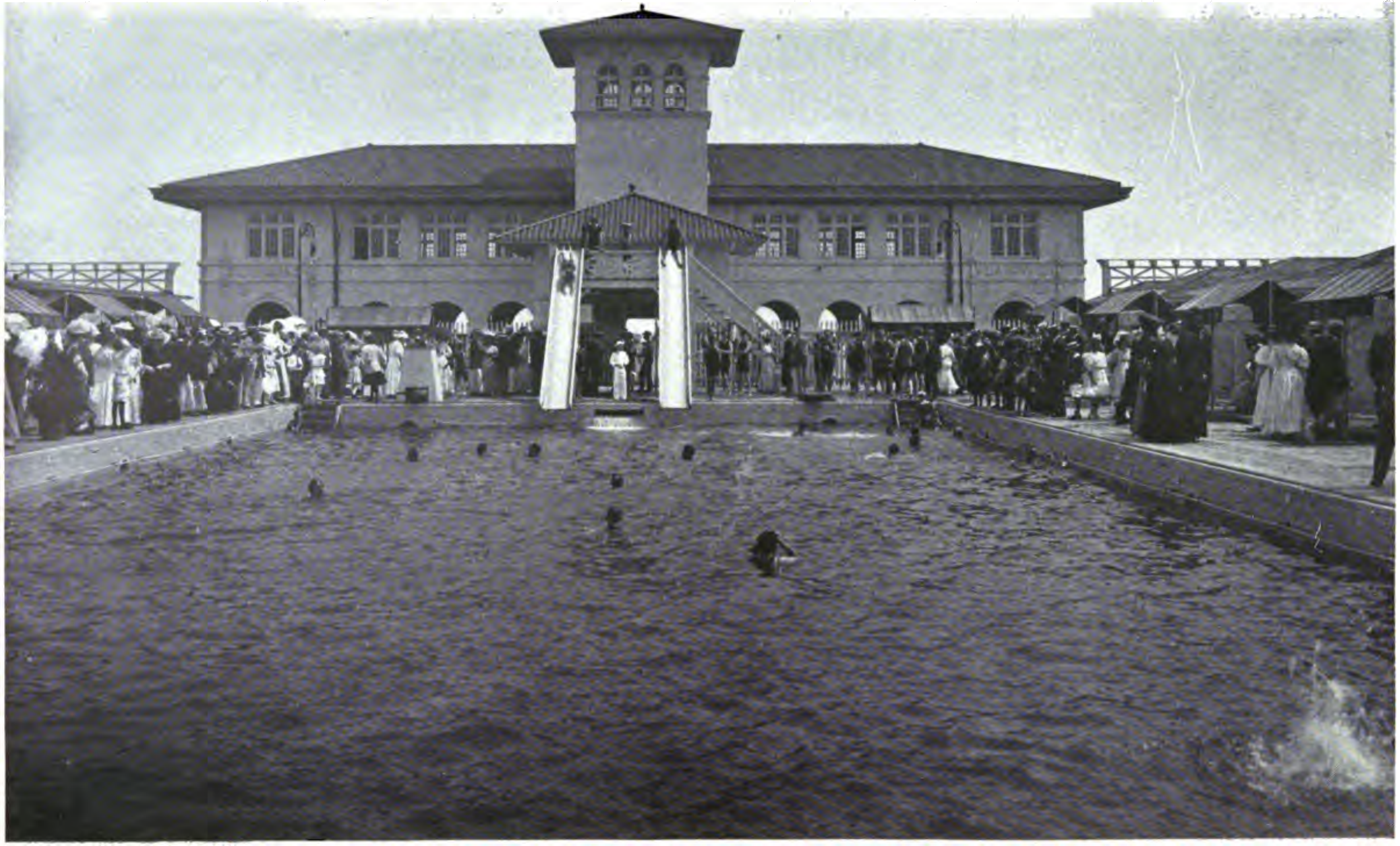
ERNEST A. HAMILL RESIDENCE, LAKE FOREST, ILL.

Spencer & Powers, Architects
Damp-proofed with "R. I. W." Damp-Resisting Paint
Fuermann Photo.

KEITH'S THEATRE,
PHILADELPHIA

A. E. Westover, Architect
Protected with "R. I. W." Damp-Resisting Paint

PLEASURE RESORT CONSTRUCTION PROTECTED WITH TOCH BROTHERS' PREPARATIONS



THE DEAL BEACH BATHING POOL, DEAL BEACH, NEW JERSEY

David M. Ach, Architect

Tiling of pool Damp-proofed with "R. I. W." Damp-Resisting Paint

BELLE ISLE CASINO, BELLE ISLE, MICH.

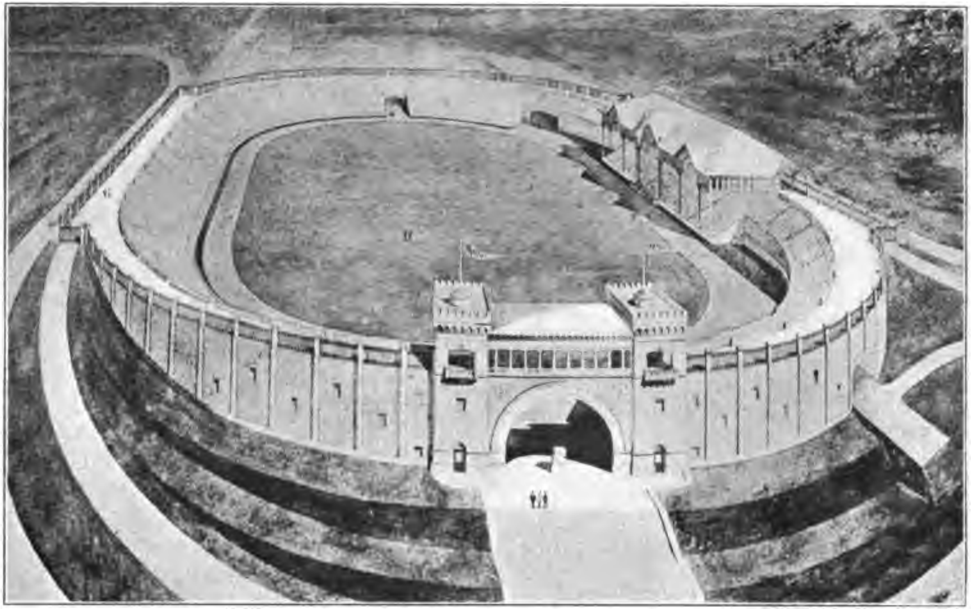
Van Leynt & Schilling, Architects Otto Misch, Contractor

Protected with "R. I. W." Damp-Resisting Paint

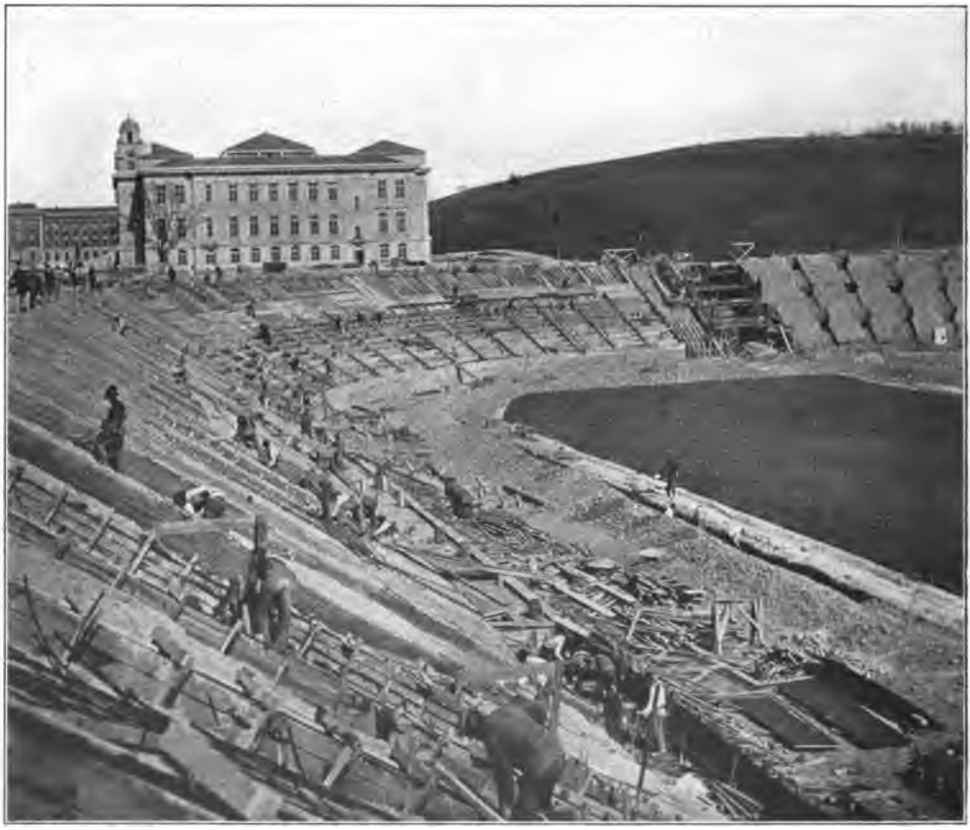
NEW STAR THEATRE, MILWAUKEE, WIS.

Kirchoff & Rose, Architects

Protected with "R. I. W." Damp-Resisting Paint, "Liquid Konkerit" and Cement Filler and Cement Floor Paint



THE STADIUM, SYRACUSE UNIVERSITY, SYRACUSE, N. Y.
Revels & Hallenbeck, Architects
Copyright by Consolidated Engineering and Construction Co., General Contractors



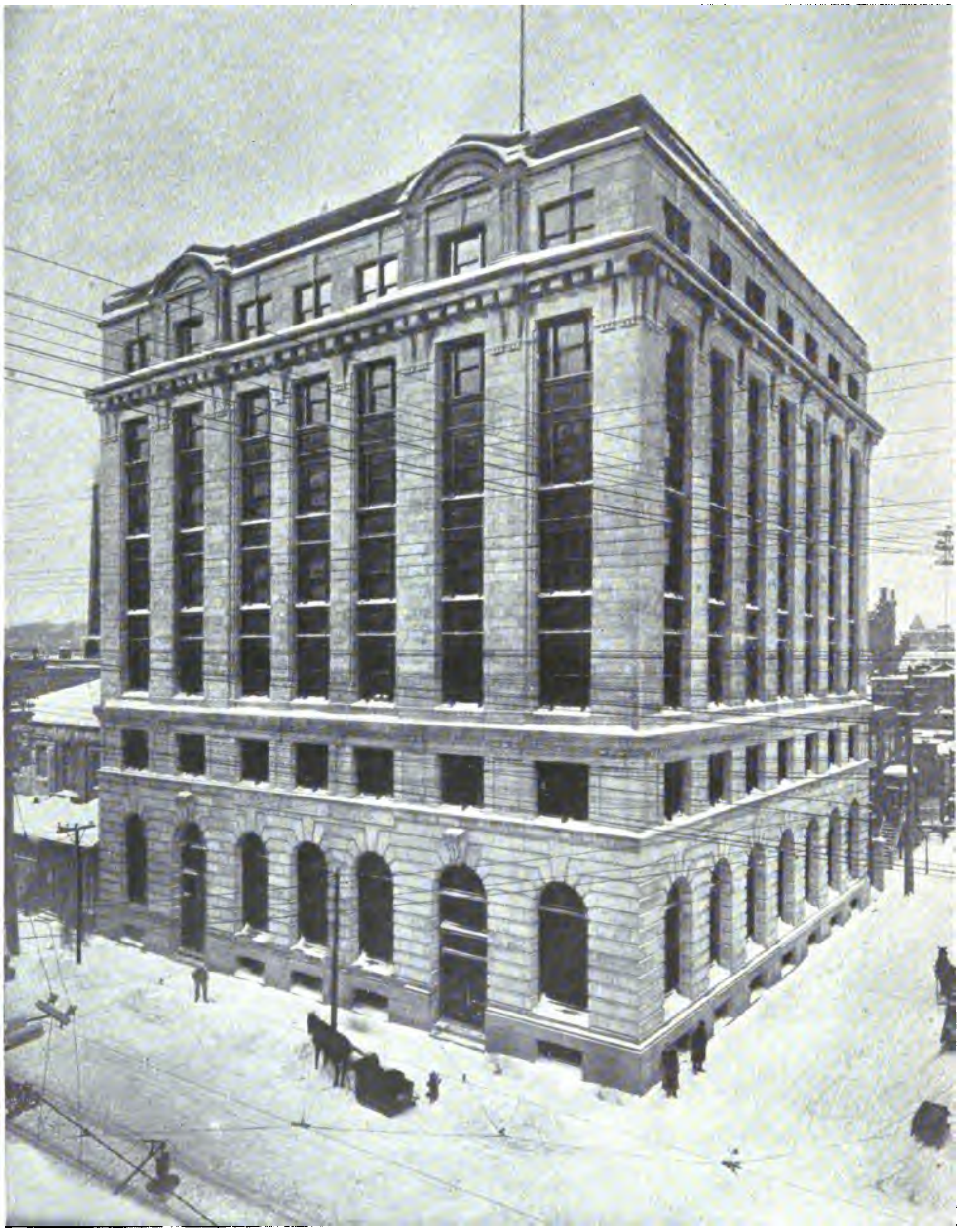
VIEW OF STADIUM DURING ERECTION
Protected with " Liquid Konkerit "

COATING PLANT OF WEST VIRGINIA PULP AND PAPER COMPANY'S PIEDMONT MILLS, PIEDMONT, WEST VIRGINIA

F. G. Ten Broeck. Consulting Engineer
Riter-Conley Mfg. Co., Contractors

Illustration shows "Tockolith" on Steel Work

POWER STATIONS, WAREHOUSES AND FACTORIES PROTECTED WITH TOCH BROTHERS' PAINTS



MONTREAL LIGHT, HEAT & POWER BUILDING

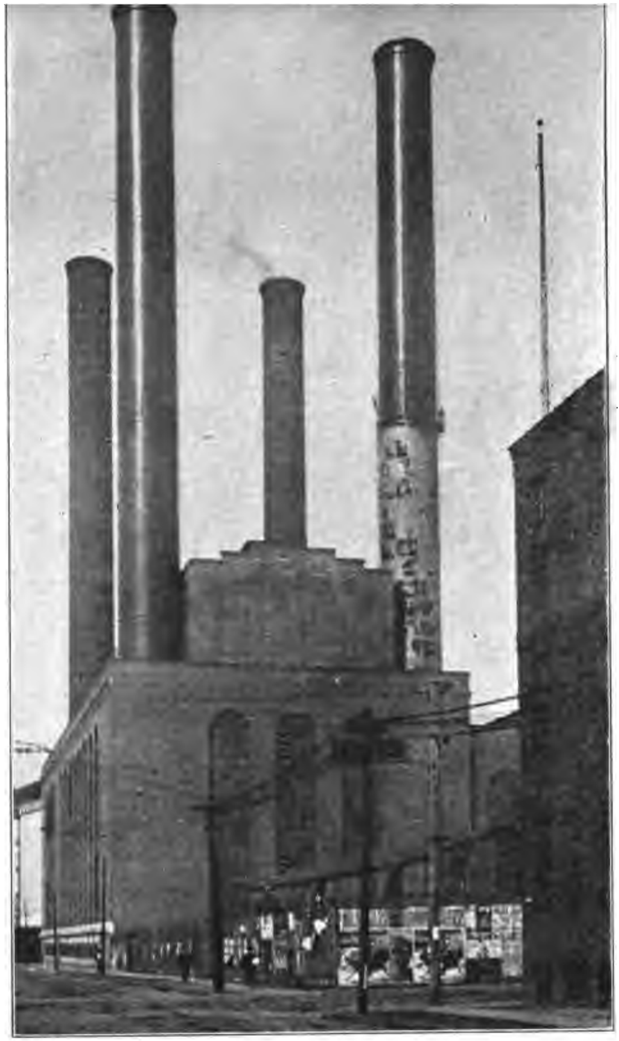
K. G. Rea, Architect
John Quinlan & Co., Contractors

Protected with "R. I. W." Damp-Resisting Paint

MURPHY POWER BUILDING, DETROIT, MICH.

Rogers & MacFarlane Co., Architects
A. A. Albrecht Co., Contractors

Protected with Cement Filler and Cement Floor Paint

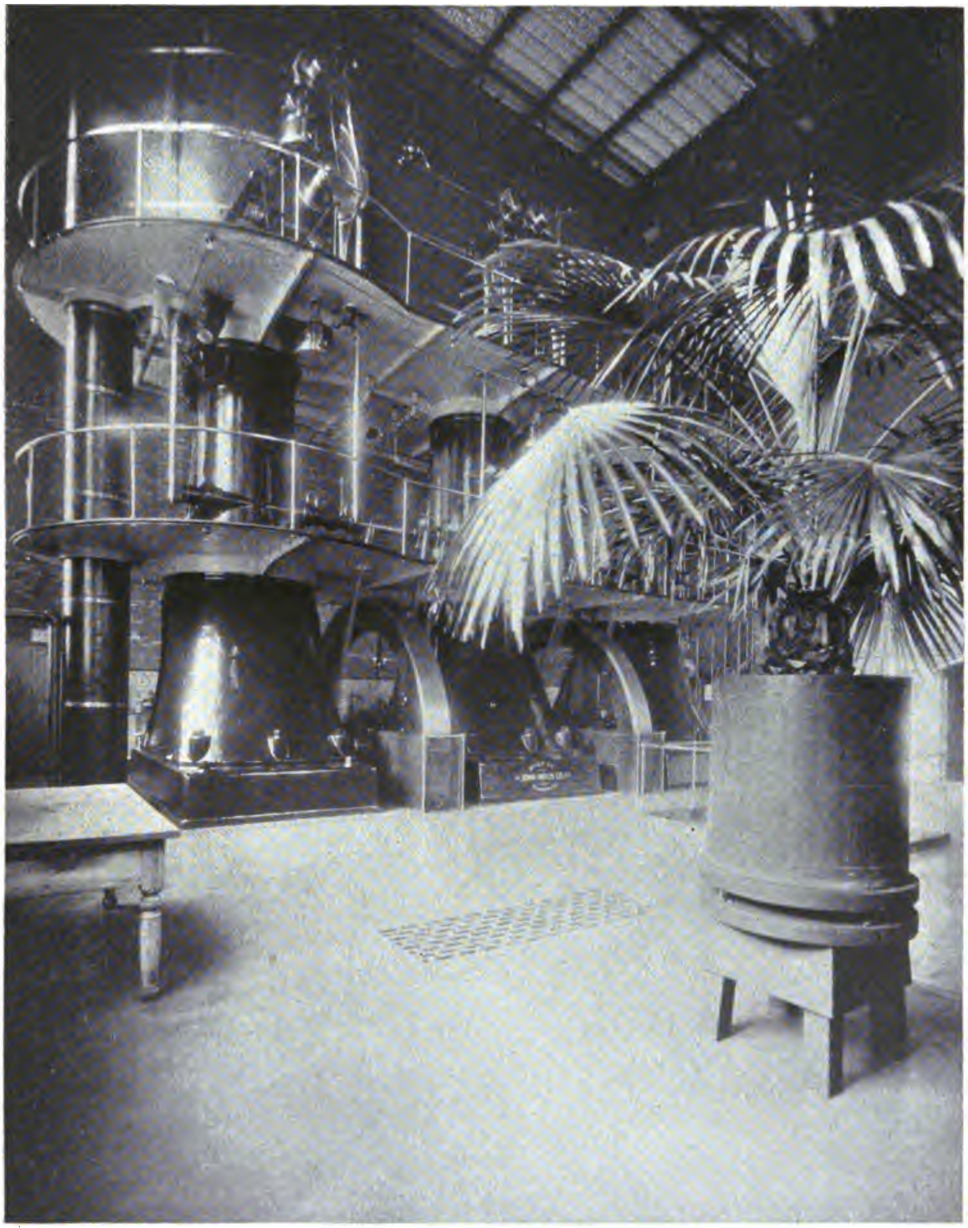


PENNSYLVANIA TERMINAL POWER BUILDING
LONG ISLAND CITY, N. Y.

Westinghouse-Church-Kerr Co., Engineers and Contractors
Protected with "R. I. W." Damp-Resisting Paint
Illustration shows application of "Tockolith" and "R. I. W. No. 49" on Power Station Stacks

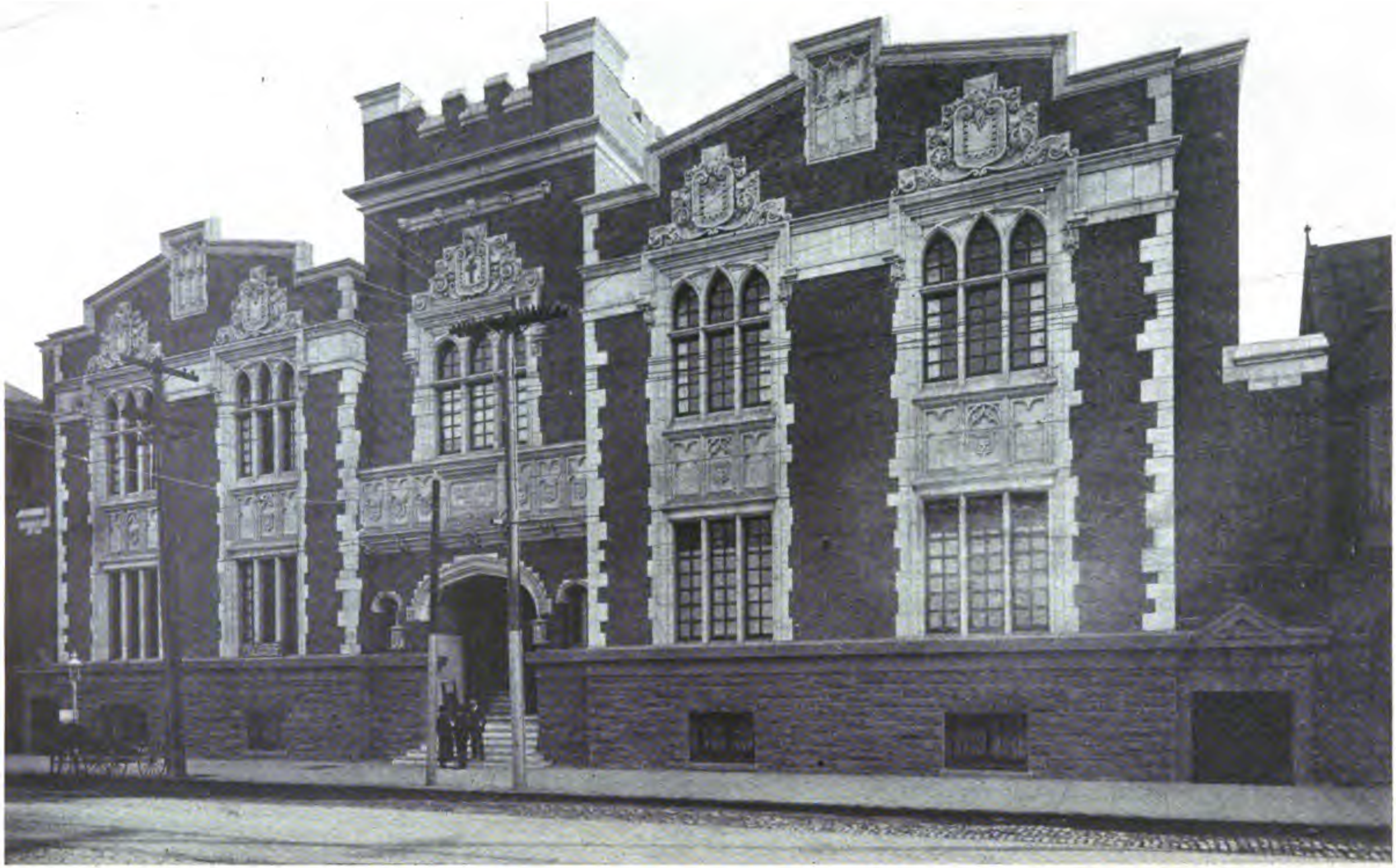
KRIEGSHABER WAREHOUSE, ATLANTA, GA.
Protected with "R. I. W." Damp-Resisting Paint

MEYER-ROTH BUILDING, CHICAGO, ILL.
Hill & Woltersdorf, Architects
Protected with "R. I. W." and Cement Filler and Cement Floor Paint



TORONTO WATERWORKS PUMPING STATION, TORONTO

Cement floor protected by Cement Filler and Cement Floor Paint



GOLDEN GATE KNIGHTS COMMANDERY, SAN FRANCISCO, CAL.

Ross & Burgren, Architects Ira W. Coburn, Contractor

Protected with "R. I. W." Marine Cement

THE NEW SAN FRANCISCO
AND TOCH BROTHERS'
PROTECTIVES

NEW
ALCAZAR

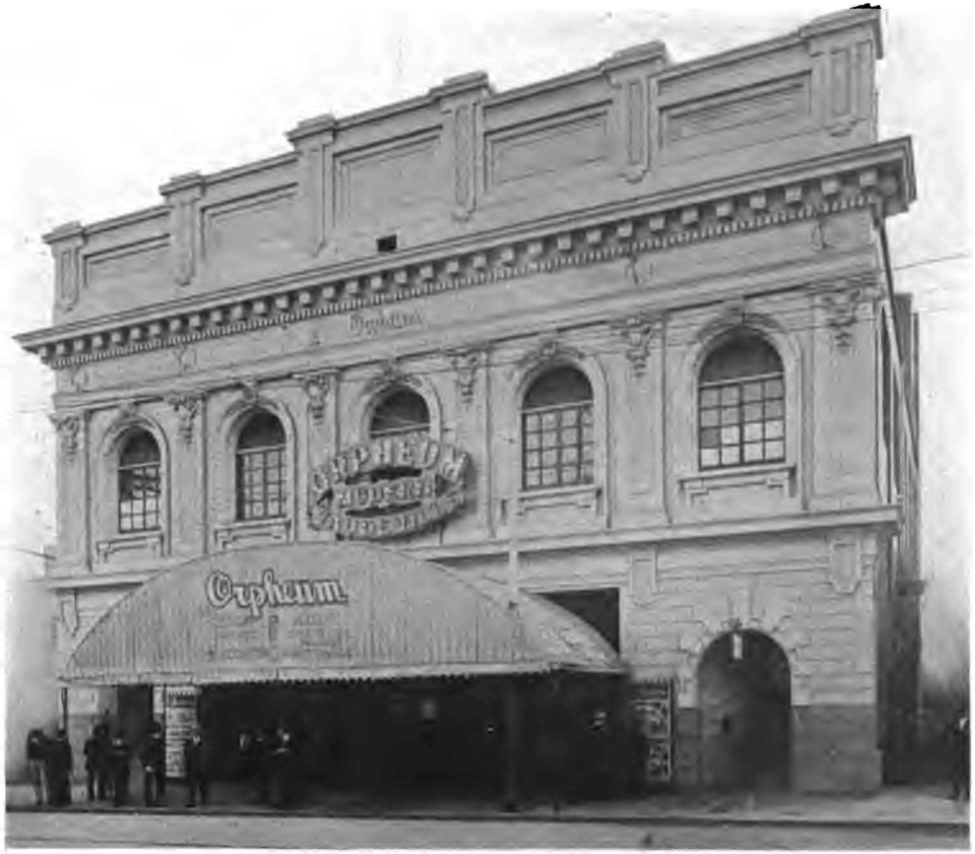
BANCA
ITALIANA
COLOMBO

ALCAZAR THEATRE
H. C. Corwin, Architect
Damp-proofed with "R. I. W." Damp-Resisting Paint

BANK OF COLUMBUS
Meyer & O'Brien, Architects
Protected with "R. I. W." Damp-Resisting Paint

HOTEL MOHAWK
Cunningham & Politeo, Architects
Protected with "R. I. W." Damp-Resisting Paint

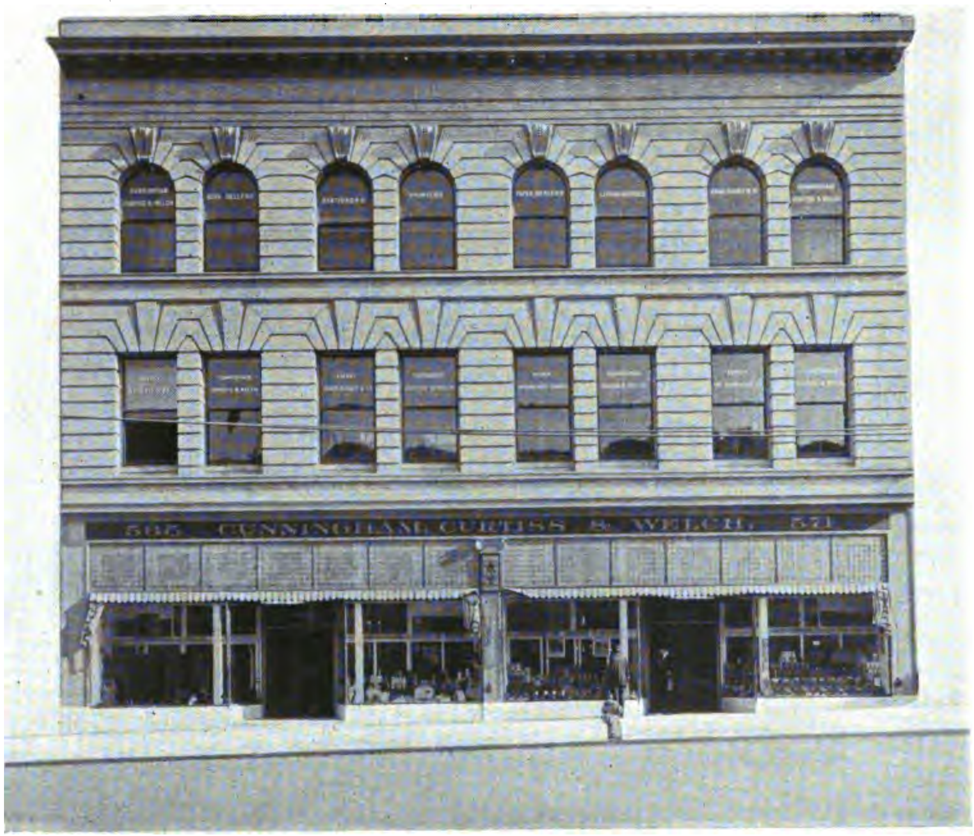
CALIFORNIA CASKET CO. BUILDING
Albert Pissis, Architect
Protected with "Liquid Konkerit" on exterior walls



ORPHEUM THEATRE

O'Brien & Werner, Architects

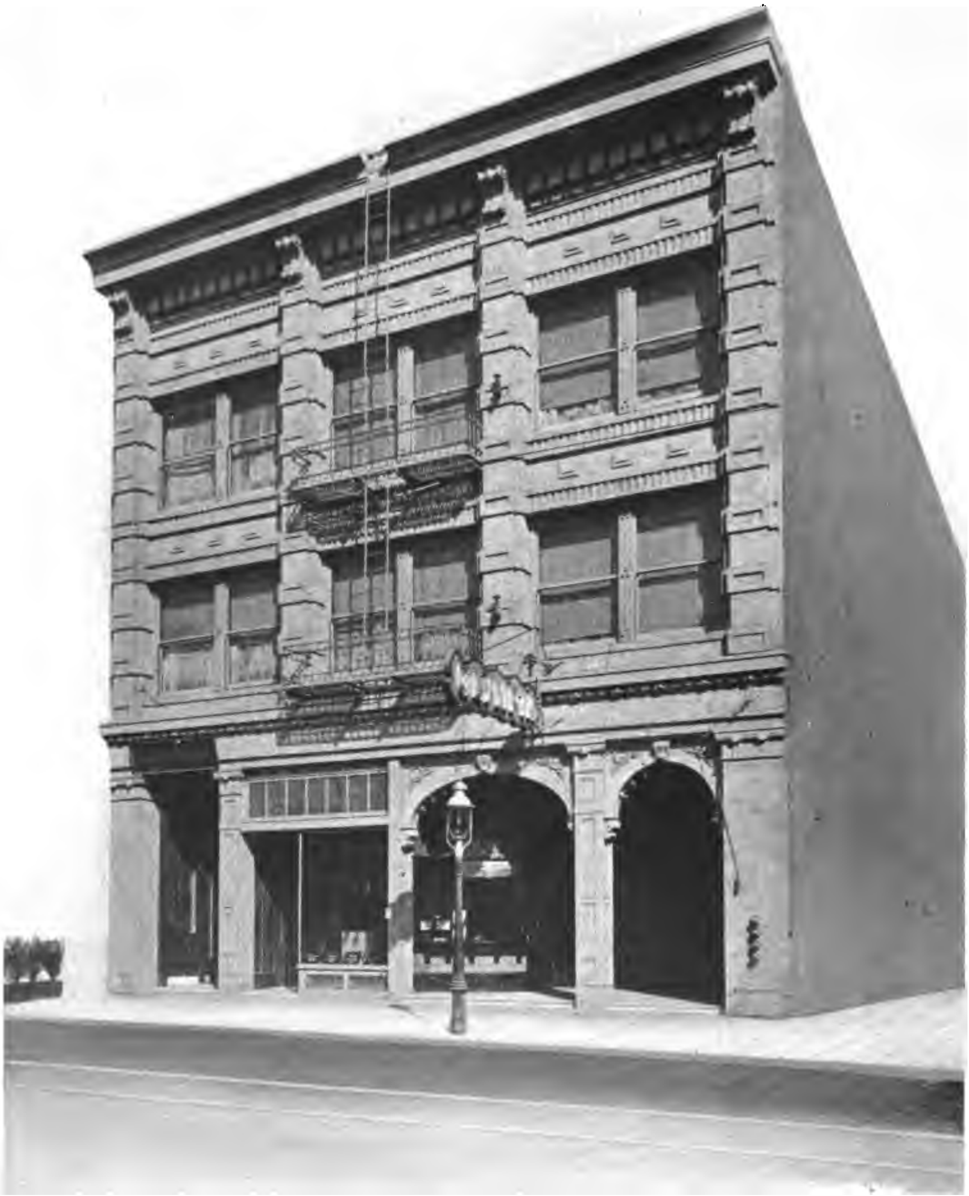
"R. I. W." Damp-Resisting Paint on Foundations



SAMSON TAMS BUILDING

Hemenway & Miller, Architects

"R. I. W." Damp-Resisting Paint on Foundations

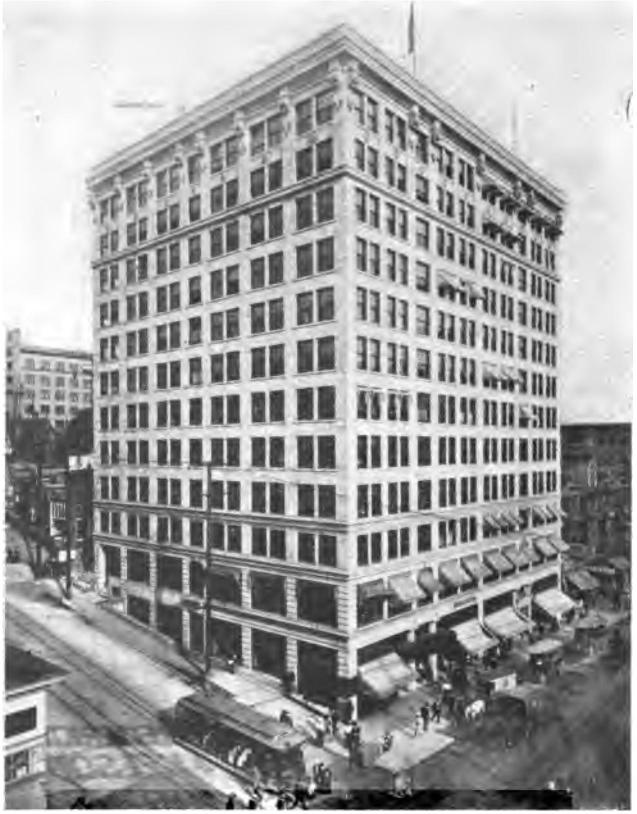


RUBY HILL VINEYARD CO. BUILDING

Meyers & Ward, Architects,

Damp-proofed with "R. I. W." Damp-Resisting Paint

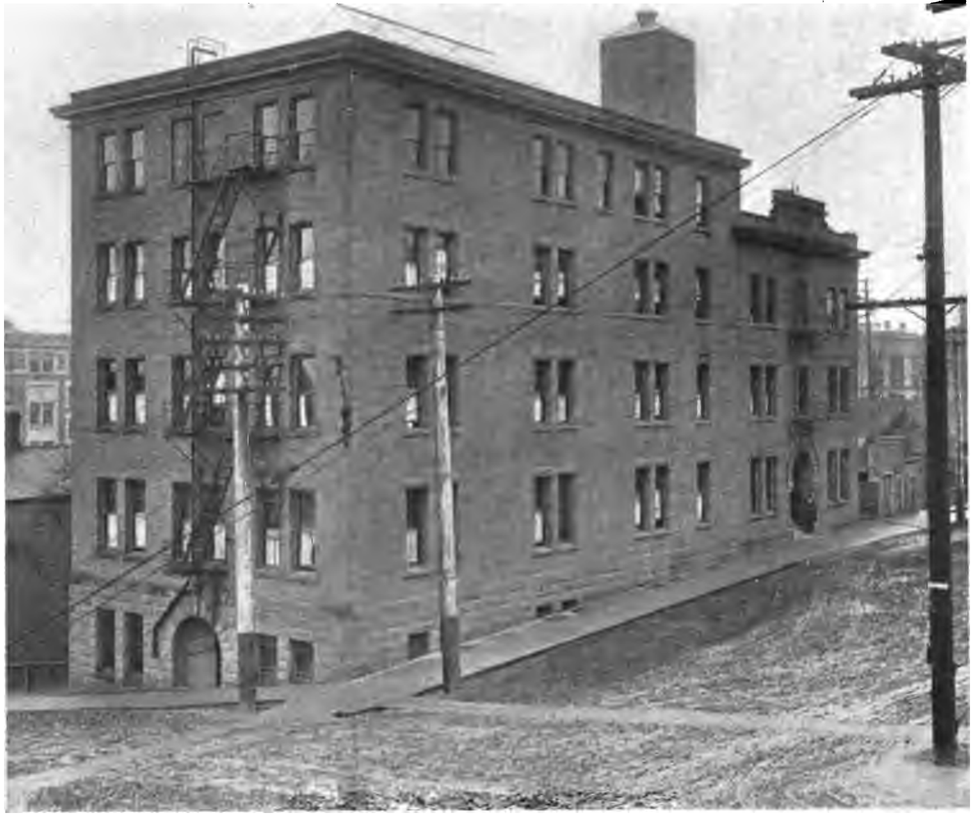
TOCH PROTECTIONS
FROM A TYPICAL
COAST CITY
SEATTLE



AMERICAN BANK & EMPIRE BUILDING

A. Warren Gould, Architect

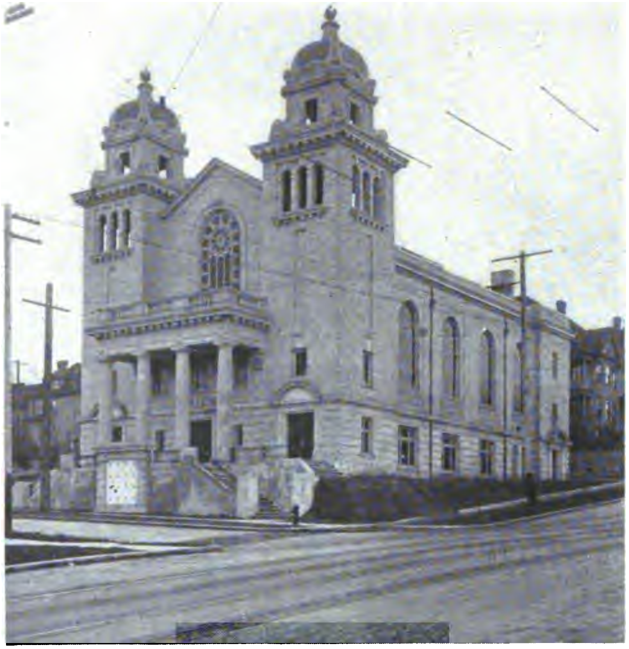
Protected with "R. I. W." Damp-Resisting Paint



SEATTLE GENERAL HOSPITAL

James Schack, Architect
A. Pearson, Contractor

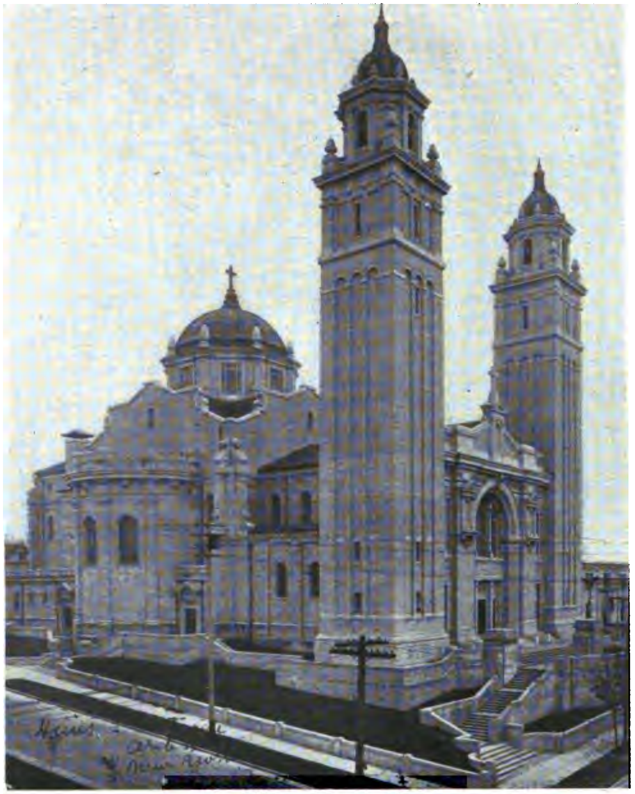
Damp-proofed with "R. I. W." Damp-Resisting Paint



TEMPLE DE HIRSCH

J. F. Everett, Architect

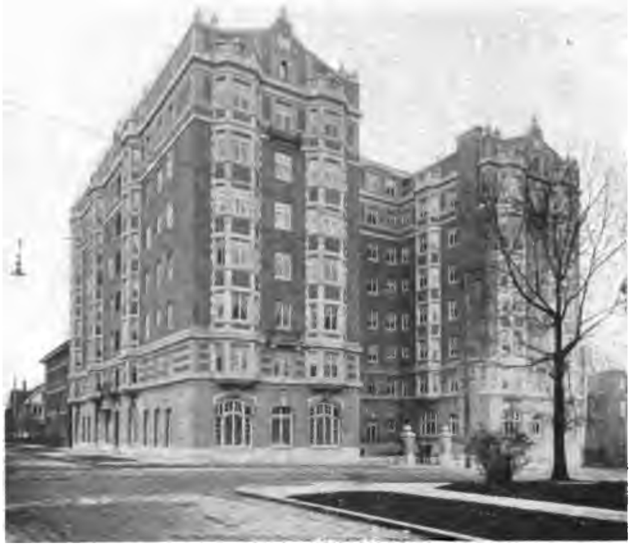
Protected with "R. I. W." Damp-Resisting Paint



CATHOLIC CATHEDRAL

Heins & LaFarge, Architects

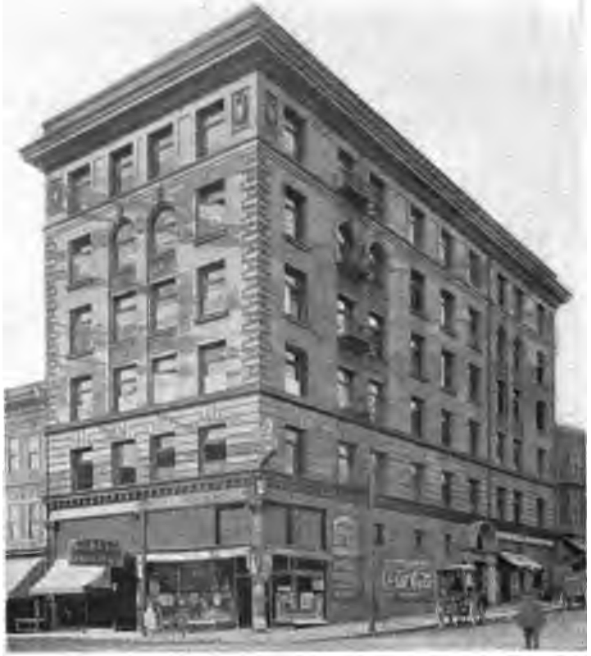
Protected with "R. I. W." Damp-Resisting Paint



PERRY APARTMENTS

Somerville & Cote, Architects

Protected with "R. I. W." Damp-Resisting Paint



EITEL BUILDING

W. D. Van Siclein, Architect

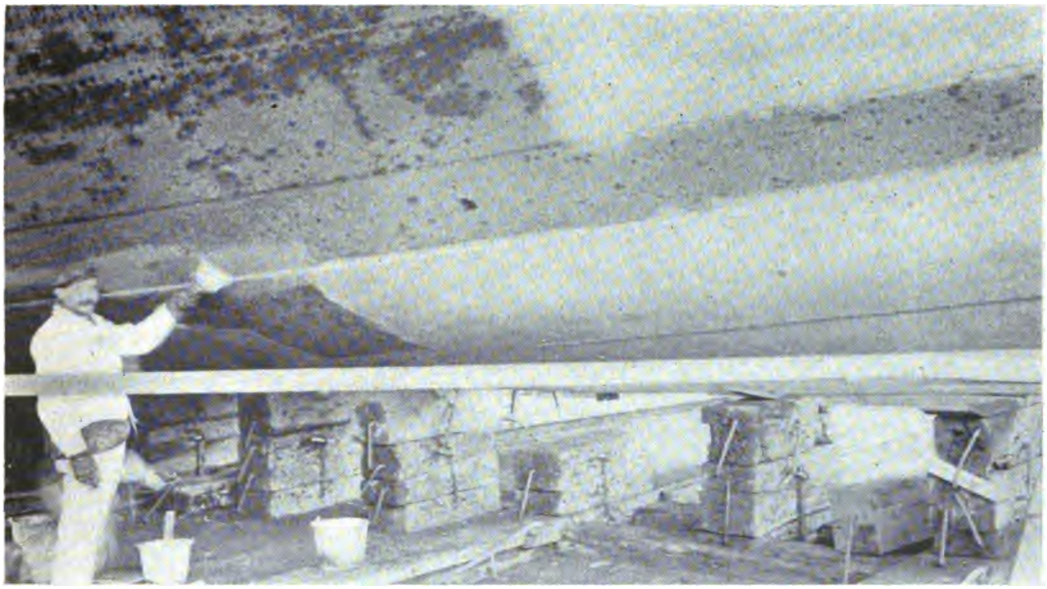
Protected with "R. I. W." Damp-Resisting Paint

"TOCKOLITH" AND "PLASTIC MARINE TOCKOLITH" ON STRUCTURAL GIRDERS AND HULL PLATES

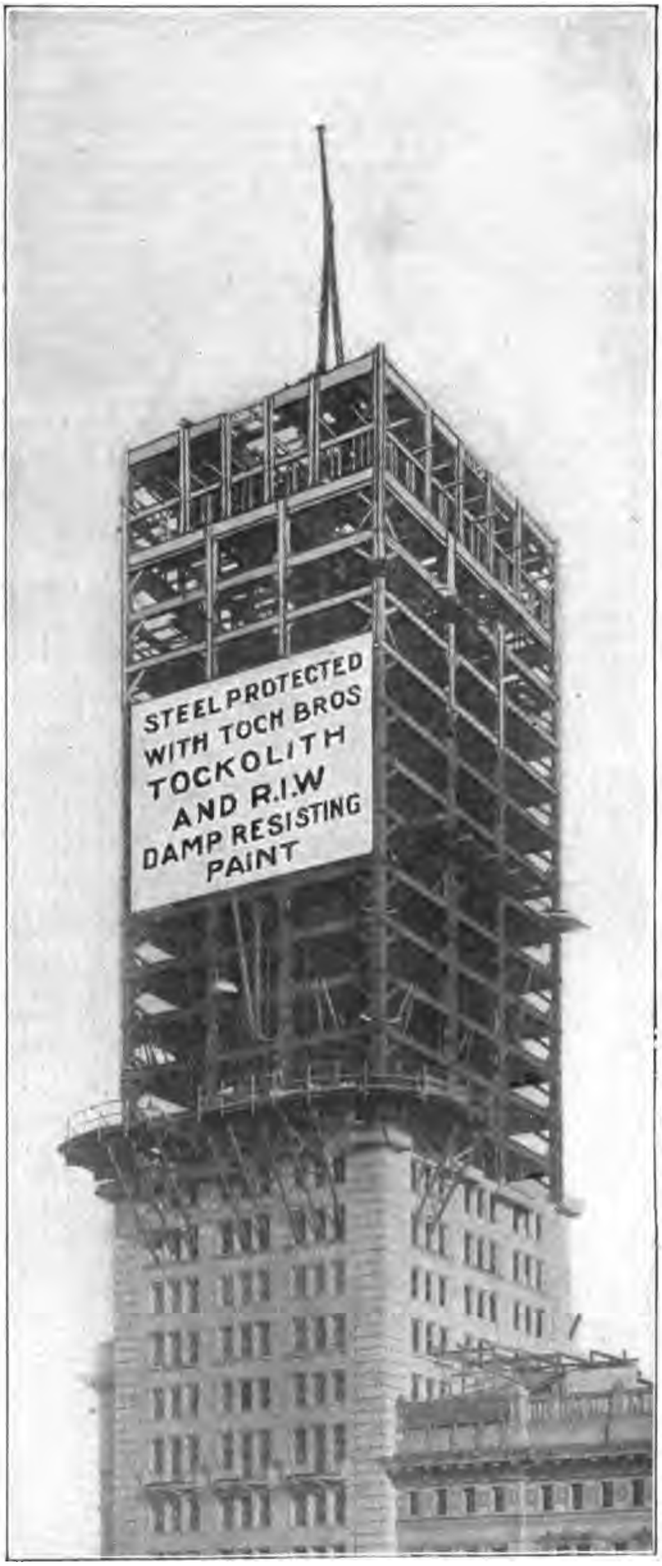
**Canarsie Extension of the B. R. T. Elevated R. R.
Primed with "Tockolith"**

Girders for the New York Terminal of the P. R. R. lying at
Greenville, N. J., exposed over 18 months.
Coated with one coat of "Tockolith"

APPLYING "PLASTIC MARINE TOCKOLITH" TO THE HULL PLATES OF FERRY COMPANY'S BOAT



"PLASTIC MARINE TOCKOLITH" MAY BE THINNED AND APPLIED BY A BRUSH AS SHOWN IN THIS ILLUSTRATION

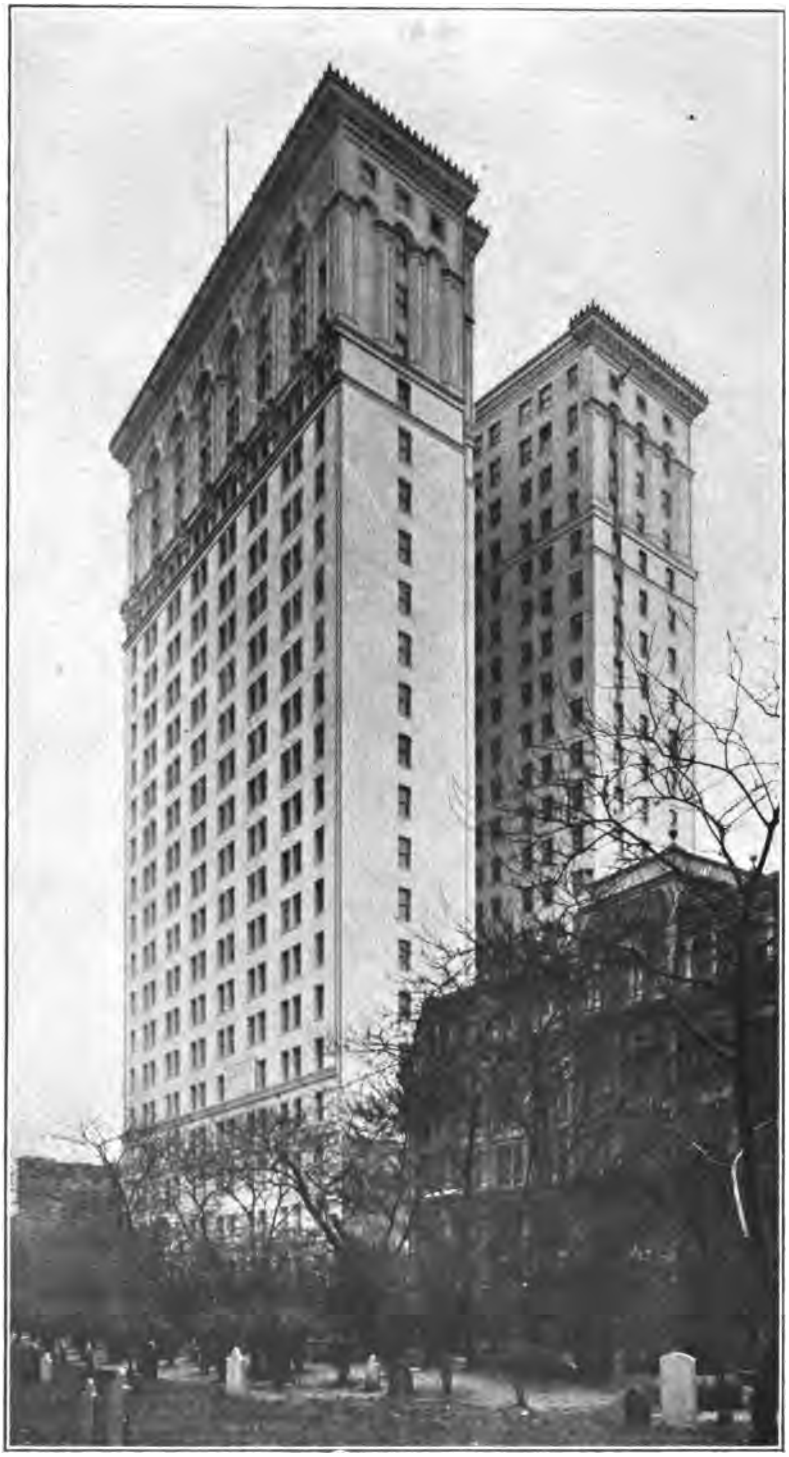


TOWER OF THE
METROPOLITAN LIFE
BUILDING
NEW YORK

Illustration shows "Tockolith" (gray) and "R. I. W." No. 49 (black) on Steel Work

“WONDER KOAT”—A NEW FLEXIBLE ENAMEL FOR INTERIORS AND EXTERIORS

“Looks like porcelain, feels like satin, wears like leather”

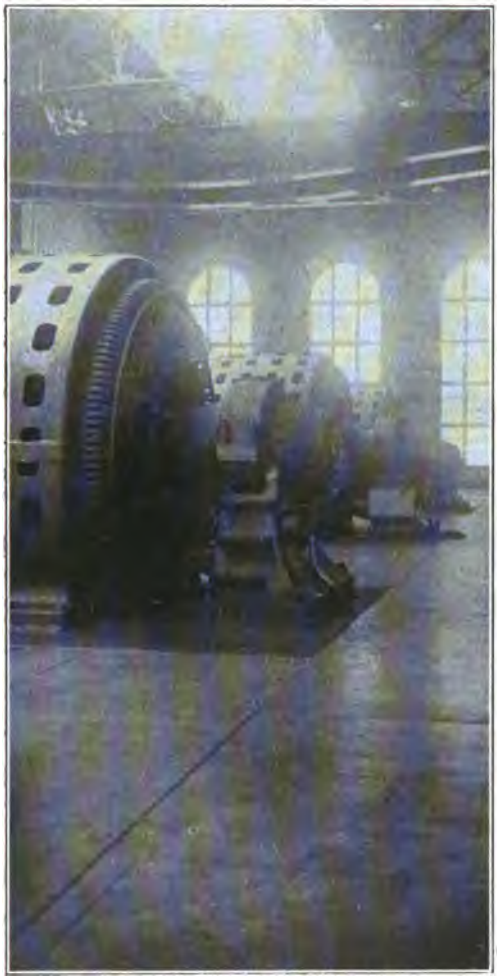


UNITED STATES EXPRESS BUILDING, NEW YORK

Clinton & Russell, Architects

Toch Brothers' "Wonder Koat" Enamel used

TECHNICAL PAINTS FOR BREWERS, ICE COMPANIES, ELECTRIC STATIONS AND HOSPITALS



Showing Polished Effect of Cement Filler and Cement Floor Paint on Generator Room Floor

Operating Room with Cement Filler and Cement Floor Paint—dustless, water- and oil-proof

COOL SHIP IN LARGE NEW YORK BREWERY

Illustration shows "R. I. W." Damp-Resisting Paint on walls to show spores of foreign yeasts
These growths are immediately seen and killed

Toch Brothers' Special Paints

The Architect has at his command a full range of Toch Brothers' protectives for all ordinary building uses, as shown in the illustrated pages of this book. On the final page may be seen a series of color slips showing the finishes more especially mentioned, and also a few other protectives manufactured by Toch Brothers.

"CEMENT FILLER" and "CEMENT FLOOR PAINT," Patented. This is an inorganic resin. The principle of our Cement Filler is as follows: All concrete and cement liberates calcium hydroxide in the setting. We have manufactured an organic resin (not a rosin), which when coated on a cement floor or cement structure combines with the free calcium hydrate and forms a true calcium resinate. Inside of ten hours this combination is complete, and the floor is then treated with another coat of the same material containing an inert pigment. Within ten hours this second coating is so hard and vitreous that it can be walked on without showing a scratch, and it is waterproof and oilproof. The first coat of Cement Filler need never be replaced; the second coat of Cement Floor Paint will wear off through much walking upon, and perhaps once a year, more or less, it should be touched up.

The floor so finished is adaptable to uses, not only in power stations and manufacturing plants, but to the finer service required in hospitals, office buildings, and private houses. It is perfectly clean, germ-proof, and requires a minimum of labor for cleansing. The six shades furnished are shown on the color sheet, and these are the second coats over the "Cement Filler" priming coat. Neither should be used alone on a cement floor, but occasionally a wooden floor is painted with the hard "Cement Floor Paint" with good success in appearance and wearing qualities.

"TOCKOLITH." This is shown at the top of the second column, and illustrates acceptably the appearance of the material. "Tockolith" is the priming coat on iron and steel.

"R. I. W. NO. 49" is shown immediately beneath. This is used with "Tockolith" as a weather-protective and insulator. The "R. I. W. No. 49" is typical in color of most of the long series of "R. I. W. Damp-resisting Paints," although the paints vary widely in covering capacity and ingredients.

"R. I. W." NO. 49—This is especially intended for exposed work on bridges, metal roofs, etc. Is of great covering capacity. Is also used as a first coat on Brine Pipes, etc., where they cannot be thoroughly cleansed before painting.

"LIQUID KONKERIT" is a cement paint ready for use, intended as a coating for brick or concrete walls. It fills up the pores and crevices with a liquid cement which makes the surface impervious to dampness. It is usually applied on the outside of walls, and one coat of "Liquid Konkerit" takes the place of two coats of lead and oil paint. "Liquid Konkerit" is a light gray in color, and is similar in appearance to Neat Portland Cement. It can be second coated with one coat of any good Oil Paint to obtain a lighter shade, such as is usually desired. One coat of our Ready Mixed Oil Paint will thoroughly cover "Liquid Konkerit."

"R. I. W." NO. 232—Over this grade you can plaster without furring or lathing, keeping out dampness from your buildings. Used on cellar walls where you plaster.

"R. I. W." NO. 110—Used on roofs under tin or canvas, and on iron or woodwork not exposed to the weather; for backing limestone to prevent staining; also in chemical works, being acid and alkali proof.

"R. I. W." NO. 112—For Brine and Condenser Pipes, Iron and Woodwork, etc., where not subjected to the influence of the elements. On Bridges, Viaducts etc., where used for exterior work, it should be painted over with any of our Flex-Sicco oil paints.

"R. I. W." NO. 5—Electrical insulating. For insulating Electrical Wires, Conduits, Junction Boxes, etc. Similar to No. 110, but dries quicker.

"R. I. W." SMOKESTACK PAINT—Used on iron and other metal, wherever intense heat is brought to bear. Used on boilers and boiler fronts.

"R. I. W." MARINE CEMENT. Patented.—For Bulkheads, damp courses underneath concrete floors, between sheathing, under rubber tiles, cementing them down and making floor waterproof; for between decks of vessels and caulking of hulls, ordure of animals cannot penetrate it; also on outside cellar walls to waterproof.

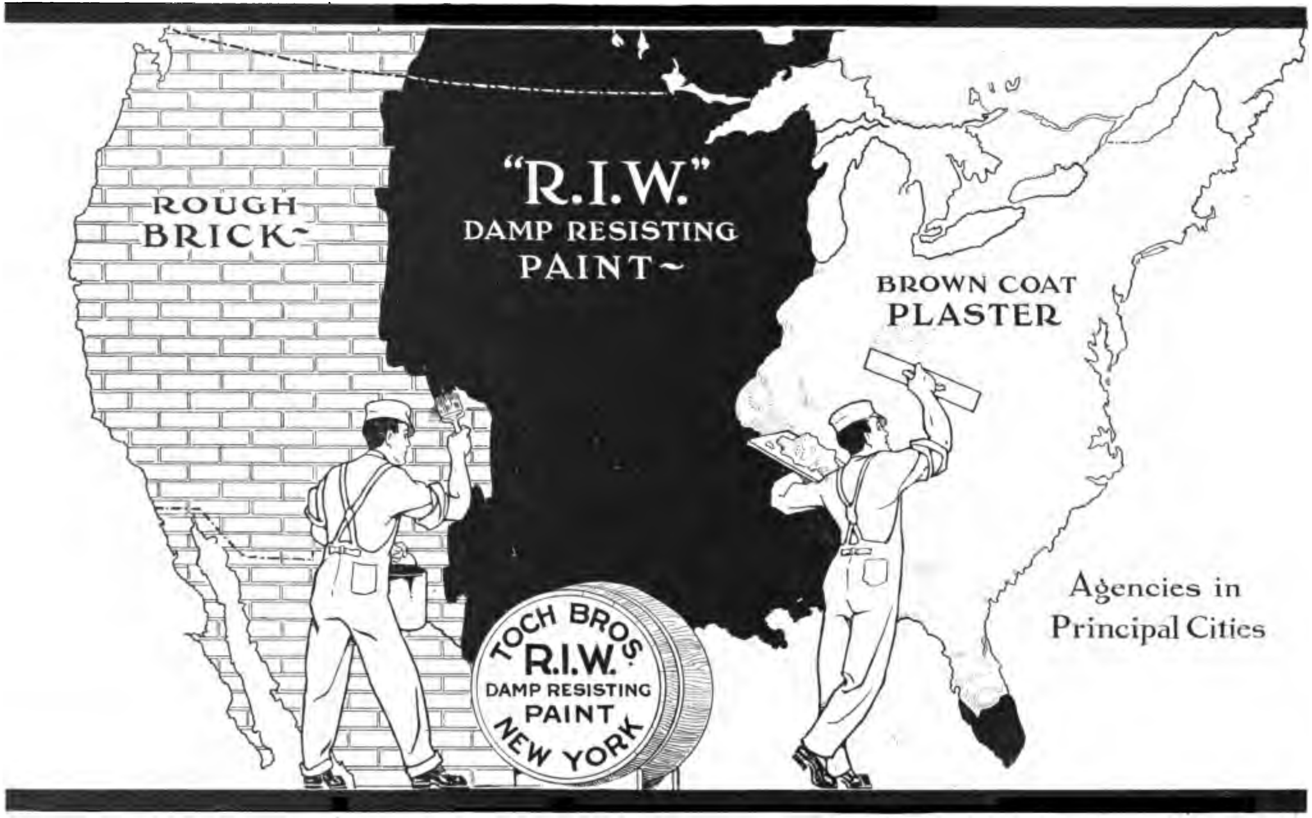
"WONDER KOAT" ENAMEL—This enamel looks like porcelain, feels like satin and wears like leather. It is a permanent finish for exterior or interior work, and, being flexible, cannot chip or mar. It may be cleansed with water. It is made in both gloss and egg-shell finish. While only white is shown on the color card, it may be had in any color. This material is particularly suited for Colonial and Georgian period style work.

"HOSPITAL AND LABORATORY ENAMEL"—This enamel is not shown on the color sheet. We have been making it for several years for hospitals, chemical laboratories and other places where gas has an influence on paint, and are pleased to inform you that our first coat and finishing coat of Hospital Enamel and Laboratory Enamel are absolutely unaffected by sulphur gases, neither do they blacken nor turn yellow. The first coat Laboratory Enamel dries with a dull finish in 4 hours and can be re-coated within 10 hours. The second and third coats are alike, and it is necessary to state whether you want an egg-shell gloss finish or a high gloss finish, for in the absence of any information we always send the high gloss finish. A wall or ceiling coated with these enamels can be washed with a hose and always kept in perfectly clean condition. This enamel is sulphur-proof, acid-proof and fume-proof, and always remains white.

"SPECIAL VARNISHES"—We manufacture special varnishes for use on bathroom floors, porches, hallway floors, etc. These are distinguished by extreme length of wear and retention of their appearance under conditions which would destroy an ordinary varnish. The Bathroom Varnish, for example, is not injured by either soapy water or hot water, which would destroy the ordinary varnish on such a floor.

"TECHNICAL PAINTS"—Where the architect is concerned in the erection of a brewery, or other building in which special conditions have to be met, our services are at his command for special information regarding the materials needed to permit actual operation to be carried on under the best conditions possibly obtainable. This applies to all such structures as packing houses, food-

TOCH BROTHERS ESTABLISHED 1848 Makers of Technical Paints, Colors & Varnishes. Manufacturers of "R.I.W." Damp Resisting Paint. **NEW YORK CITY**


ROUGH BRICK
"R.I.W." DAMP RESISTING PAINT
BROWN COAT PLASTER
TOCH BROS. R.I.W. DAMP RESISTING PAINT NEW YORK
Agencies in Principal Cities

The Best Part of the World is Painted with "R.I.W."

product factories, breweries, and the sanitation of mills having to do with the cotton and other textile trades, trades based on complex and delicate chemical or fermentative processes, etc. These details regarding Toch Brothers' Paints are at the service of the profession.

In conclusion, we would wish to impress on the architect these facts:

It takes years and years of experience and practice to know how to make perfect paint or varnish.

We have the experience and practical knowledge.

Therefore, the specialties we offer we positively excel in—"Tockolith" for steel, "R. I. W." paints for damp-proofing, "Toxement" for waterproofing cement, "Konkerit," and "Cement Filler," and "Cement Floor Paint" for cement and paints for stone and brick. Also, "Wonder Koat" Enamel, etc.

Others may have strength in other branches of the business, but as to materials for coating and protecting wood, or steel, or cement, or brick, we stand alone, as our Sixty Years of uninterrupted technical paint and varnish career proves.

TOCH BROTHERS

Makers of Technical Paints and Varnishes for Every
Purpose and Trade

320 FIFTH AVENUE, NEW YORK

Works: Long Island City

ESTABLISHED 1848

THE METROPOLITAN TOWER

A Campanile 700 Feet High

(Reprinted from the *Scientific American,* May 2, 1908, with the kind permission of Munn & Co. Coyright, 1908, by Munn & Co.)

The majestic steel-and-marble campanile of the Metropolitan Life Insurance Company's building on Madison Square is climbing skyward at such a rapid rate, that already its topmost floor is about 500 feet above the sidewalk. The excavations for the foundations were commenced late in the autumn of 1906. The erection of the steel work was begun on February 15, 1907, and the work has progressed so rapidly that the last piece of steel work will have been riveted in place, 700 feet above the sidewalk, before the close of the present month. The clothing of the building with its outside wall of Tuckahoe marble will have been completed by the following November; and it is the expectation of the architects that the whole building will be completed, ready for occupancy, by May 1, 1909.

The tower stands at the northwest corner of the Metropolitan Life Building which, including the tower, covers the whole block between Fourth and Madison Avenues and Twenty-third and Twenty-fourth Streets. The main building, which has a frontage of 200 feet by 425 feet, is ten stories in height. It is built in the early Italian renaissance style, the materials of construction being steel and Tuckahoe marble. The campanile is being carried up in the same style and of marble from the same quarries. It stands on a base measuring 75 feet by 85 feet, and the architectural treatment, as will be seen from our engraving on the front page, is chaste, somewhat severe, and eminently agreeable to the stupendous proportions of the structure. The tower conforms in line and detail to the main building as far as the fourth story, above which the treatment is simple, involving three groups of triple windows on each side, with heavily molded and deeply recessed jambs. On each face of the tower, at a height of 324 feet above the sidewalk, and covering the height of over two stories, will be a huge clock, 25 feet 6 inches in diameter on the dial, with figures 4 feet in length and with hands 12 feet in length. Two stories above the clock will be a line of massive projecting balconies, above which will be a series of Ionic loggias, presenting five arched openings on each face of the tower. The height of these loggias, which will be over 50 feet, can be judged from a study of the upper steel work of the tower, as shown in our engraving; for they will fill the whole height between the heavy trussed girders which extend entirely around the tower below the offset.

The offset has a depth of 8 feet inward from the outer face of the shaft. This offset portion is carried up for four stories and forms the base for a huge pyramidal termination, whose sloping face will be covered with the same pure blue-white marble as the shaft. The pyramid will be crowned by an octagonal colonnaded observatory, also clothed with marble, which will form the highest office floor in the building, at an elevation of 637 feet above the sidewalk. This observatory will be of no small size, consisting of a room 20 feet in diameter lighted by eight 5 x 5-foot round-top windows. The capping of the windows will form the highest point to which the marble finish of the campanile will be carried.

The extreme height at first determined upon for the tower was 658 feet; but revisions have recently been made in the plans, and as a crowning feature, it has been determined to cap the structure with a lofty observatory and lantern, 50 feet in height, which will be constructed of steel and copper and gilded. The observatory will be reached by a winding staircase from the 637-foot level, and will consist of a balustraded platform at an elevation of 660 feet above the sidewalk. This will be the highest point to which the public will be admitted, and in all conscience it is high enough.

The lantern, 40 feet in height, including its finial, will be one of the designedly spectacular features of this highly spectacular structure. It will be built of steel and copper, with strong glass windows, and it will contain an arc-light of unusual power. It is proposed to use the light for designating the time after nightfall. This will be done by giving one red flash for the quarter, two for the half, and three for the three-quarter hour, and a white flash for the hour. The great power of the light and the vast height at which it is set, will serve to make the tower as conspicuous a landmark at night as it will be by day.

Just what a tower 700 feet high actually means may best be understood when it is remembered that Eagle Rock in the Oranges is 624 feet above tidewater. The top of the Metropolitan tower will be 734 feet above the same level, and hence will overtop Eagle Rock by just 110 feet. * * * * * Mountain climbers will recall how rapidly the details of the landscape develop with every 100 feet of height that is gained at the higher elevations; and the observer from the topmost lookout will be astonished to find with what maplike precision not only Greater New York, but a wide circumference of the outlying country, is laid out before him.

During a recent inspection of the tower, we were impressed with the fact that, both in the design and the construction, *every effort has been made to produce a building that shall be permanent.* Liberal allowances have been made in every direction for any possible stresses that may come upon the structure. Collapse either by overturning or bending and breaking has been amply provided against. Bending, or distortion of the building under wind pressure, is prevented by the introduction of unusually heavy knee-braces at the junction of the columns and the floor beams on each floor; and overturning is impossible because of the enormous weight of the tower. The total dead and live load combined amounts at the foot of each of the corner columns to 7,500,000 pounds. When a gale of unusual severity is blowing, it is estimated that its pressure may possibly rise to 30 pounds on every square foot of exposed surface. The effect of this on the face of the tower would be to press down the leeward side and tend to lift up the windward side. The added downward pressure brings the total load on the leeward corner columns to 10,400,000 pounds, while at the same time the corresponding columns on the windward side, because of this uplift tendency, are relieved of pressure so that the total vertical pressure is reduced from 7,500,000 to 4,600,000 pounds. It is evident then that as long as the windward columns are bearing upon their foundations, even during a heavy gale, with a pressure of 2,300 tons, the tower is absolutely safe against overturning. The lower sections of these corner columns are very massive, being about 2 feet square, weighing over 1 ton to the lineal foot, and containing 528½ inches of section.

APPLYING TOCH BROTHERS' "R. I. W." DAMP-RESISTING PAINT OVER THE GRAY "TOCKOLITH"

This shows the painter seated in a saddle hung 500 feet above Madison Square, applying the Toch Brothers' "R. I. W." Damp-Resisting Paint on the undercoat of "Tockolith"
Photograph Copyright, 1908, H. C. White Co.

But however heavily and strongly this great campanile may be built, it is certain that, if its steel work be not protected against the insidious effects of oxidation or rusting, it will only be a question of time before it will crumble into a shapeless ruin. To preserve the steel work, special precautions have been taken. It is first treated to a priming coat of cement paint.* When the steel is delivered at the building, the contract calls for careful repainting of all the edges and all abraded surfaces. After erection, the steel is treated to a heavy coat of waterproof paint.** When this is dry, strap-iron is wrapped around the columns, the knee braces, and the exposed portions of the floor beams, and a thick envelope, consisting of three of sand to one of cement, is poured in between the inclosing wooden forms and the steel and very carefully rammed in place. This cement envelope extends 2 inches outside the widest diameter of the steel members, and fills in all the interstices, adhering closely to every square inch of surface. Thus the steel framework is absolutely protected against fire (which in a building of this kind is not a serious risk); but what is more important, rusting, the only form of decay to which the building could possibly be subjected, is prevented for all time. The floors of the building are filled in with arched concrete and finished with a granolithic surface, and thus from foundation to summit the tower is built of materials which are indestructible as far as human knowledge goes. Its life should be as long and longer than that of the Pyramids themselves; for the experience with steel and masonry buildings of inferior construction in San Francisco has shown that beyond stripping the stonework from the walls, a severe earthquake works no great injury to a structure of this kind.

The tower will be served by six elevators, which will be express to the twelfth floor. From the twelfth to the twenty-fifth floor three of them will be local and three express; while two elevators will run from the twenty-fifth to the forty-second floor and one to the forty-fourth floor.

But if anyone prefers walking to taking the elevator he can gain the 660-foot lookout by walking up 1,057 steps!

TOCH BROTHERS
Makers of Technical Paints and Varnishes
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Works: Long Island City
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* This is "Tockolith."

** This refers to "R. I. W." Damp-Resisting Paint No. 112.

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